Title: FIBER OPTIC COMMUNICATION SYSTEM Inventor(s): Hiromasa TANOBE, et al.

Atty. Ref.: 5259-054/NP

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FIG. 1-1

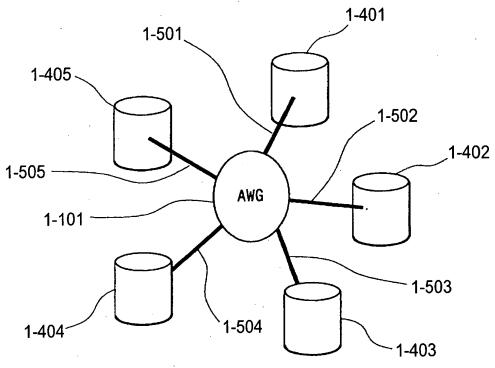
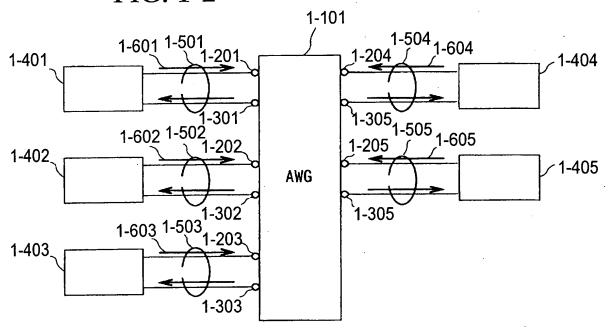
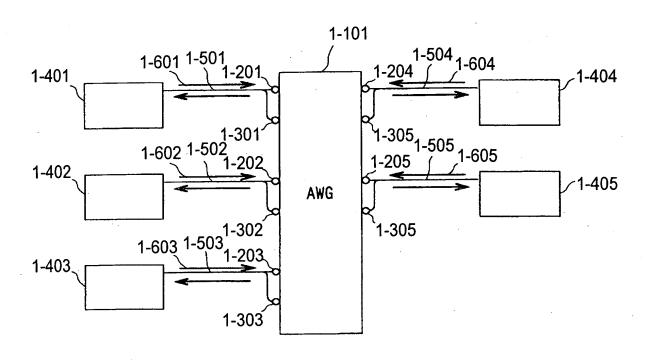


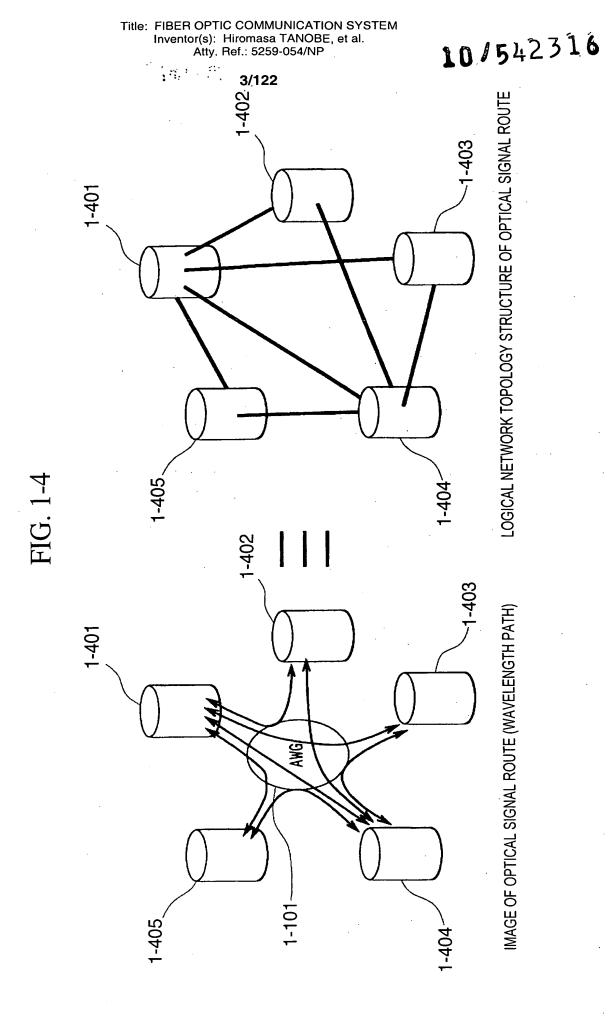
FIG. 1-2

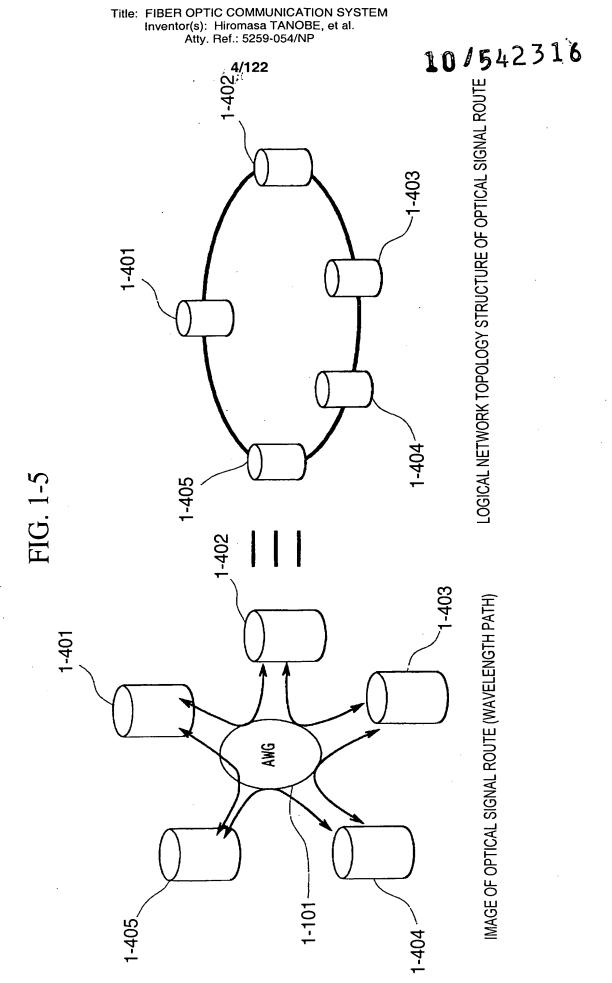


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FIG. 1-3







Title: FIBER OPTIC COMMUNICATION SYSTEM Inventor(s): Hiromasa TANOBE, et al.

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FIG. 1-6

OPTICAL OUTPUT PORT

		1-301	1-302	1-303	1-304	1-305
OPTICAL INPUT PORT	1-201	λ1	///\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\		<i>[[]</i> λ4	//////////////////////////////////////
	1-202	λ5//	λ1	λ2		λ4
	1-203	λ4	λ5	λ1	//λ2///	λ3
	1-204	λ3//	λ4	///\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\	λ1	λ2
	1-205	λ^2	λ3	λ4	//\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\	λ1

STAR(MESH)-SHAPED LOGICAL NETWORK TOPOLOGY

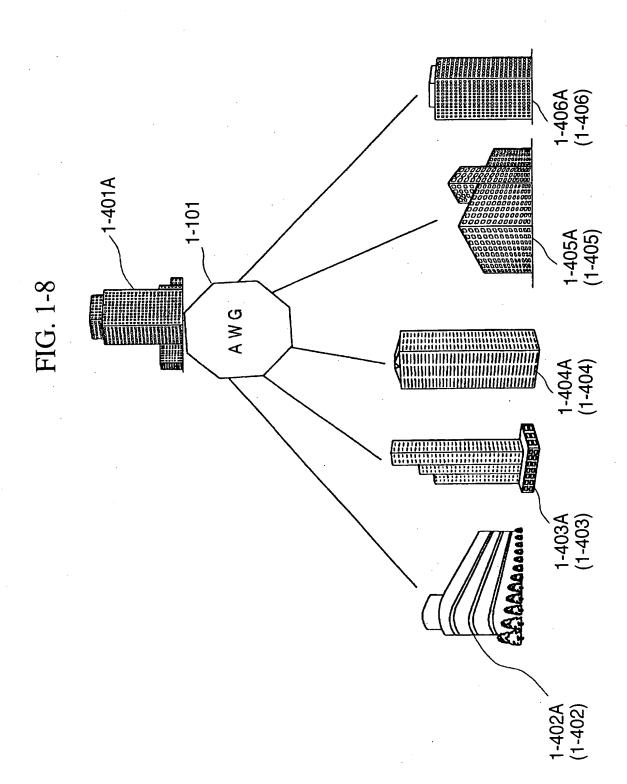
FIG. 1-7

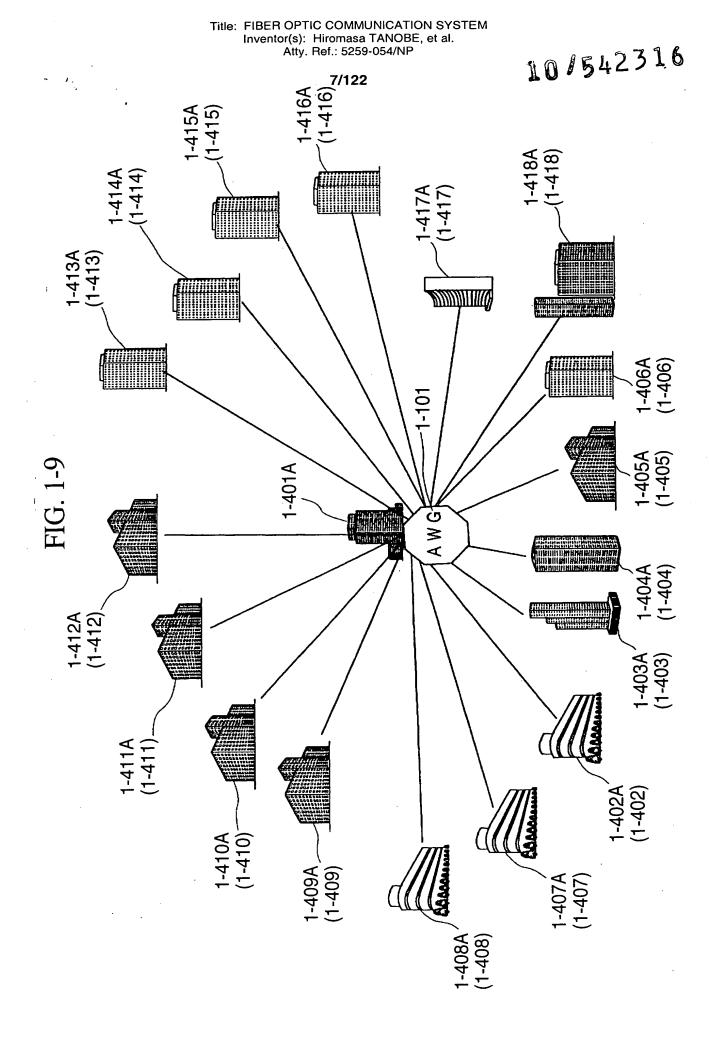
OPTICAL OUTPUT PORT

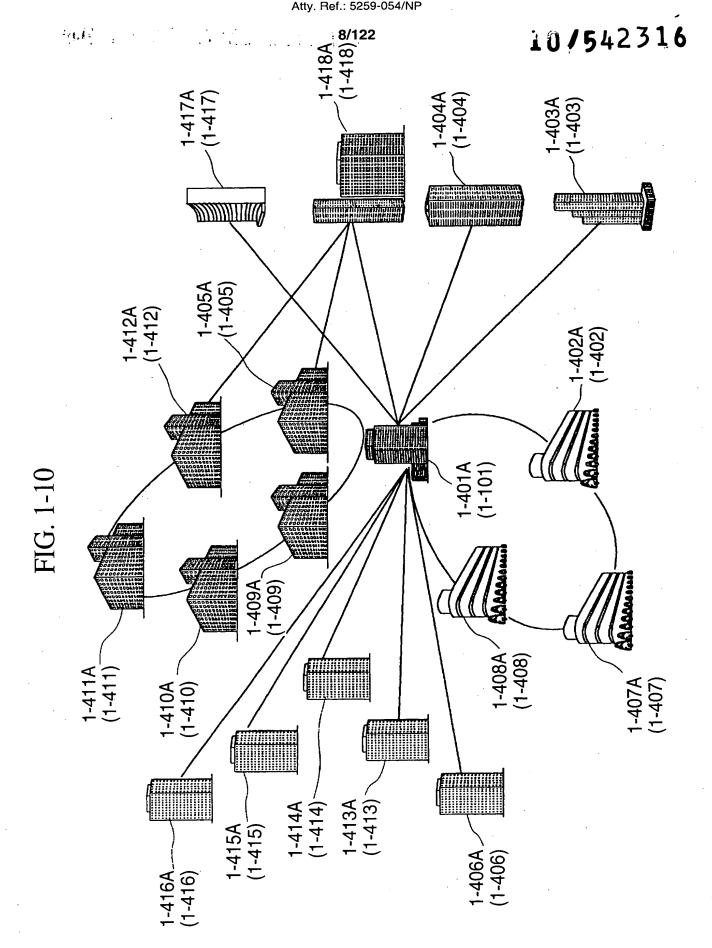
		1-301	1-302	1-303	1-304	1-305
OPTICAL INPUT PORT	1-201	λ1	///\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\	λ3	λ4	///λ5///
	1-202	//\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\	λ1	$//\lambda^2$	λ3	λ4
	1-203	λ4	//////////////////////////////////////	λ1	///\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\	λ3
	1-204	λ3	λ4	//\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\	λ1	λ2/
	1-205	//////////////////////////////////////	λ3	λ4	///\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\	λ1.

RING-SHAPED LOGICAL NETWORK TOPOLOGY

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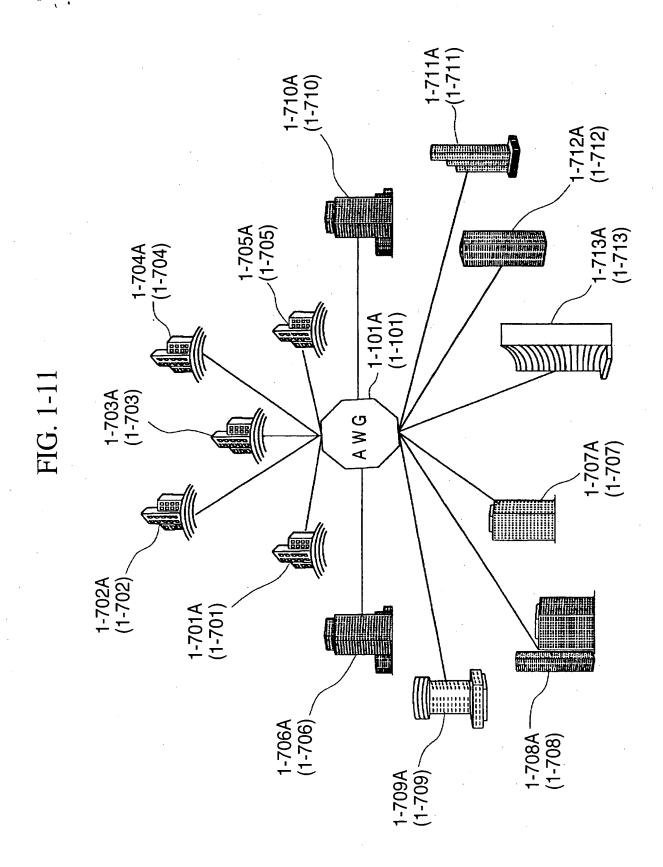






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8888 1-706A (1-706)

FIG. 1-13

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11 × × × × × × × × × × × × × × × × × ×
2 711 2 713 3 714 1-724
7 7 10 7 8 7 10 7 8 7 10 7 8 7 10 7 8 7 10 10 10 10 10 10 10 10 10 10 10 10 10
7 7 7 7 7 7 7 7 7 7 7 7 7 7 7 7 7 7 7
λ7 λ8 λ9 λ10 λ11
7 7 8 7 8 7 8 8 7 8 8 8 8 8 8 8 8 8 8 8
7 7 7 7 7 7 8 8 8 8 9 9 9 9 9 9 9 9 9 9
24 7 7 7 7 7 7 7 8 7 7 7 8 7 7 9 9 9 9 9 9
7 7 7 7 7 7 7 7 7 7 7 7 7 7 7 7 7 7 7 7
7 7 7 7 7 7 7 7 7 9 7 9 7 9 7 9 7 9 7 9
77 73 74 75 75
7 7 7 7 7 7 7 7 7 7 7 7 7 7 7 7 7 7 7 7
7 7 15 7 15 7 15 7 15 7 15 7 15 7 15 7
7 7 15 7 14 7 15 7 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1
7 7 13 7 13 7 14 7 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1
112 113 114 115 116
12 13 15 16 16

OPTICAL INPUT PORT

FIG. 1-15

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	16	λ 16	λ1	λ2	λ3	λ4	λ5	λ6	λ7	λ8	λ9	λ 10	λ11	λ 12	λ 13	λ14	λ 15
	15	λ15	λ16	λ1	λ2	λ3	λ4	λ5	9γ.	14	λ8	λ9	λ 10	γ11	λ 12	λ13	λ14
	14	λ14	λ15	λ 16	۲1	λ2	λ3	74	Υ 5	γ 6	27	8Υ	λ9	A 10	λ11·	λ12	λ13
	13	λ 13	λ14	λ 15	λ 16	λ1	λ2	γ3	λ4	γ2	9γ	14	8γ	6γ	7 10	۲11	λ12
	12	λ12	λ13	λ14	λ15	λ 16	٧1	75	88	74	9γ	9γ	1Υ	8γ	6γ	λ10	711
	=	λ11	λ12	λ13	λ14	λ 15	λ 16	71	γ5	γ3	74	9 γ	9γ	LY	8γ	6 Y	λ 10
	10	λ 10	111	λ12	λ 13	λ14	λ 15	λ 16	11	75	εγ	74	9 Y	9γ	27	γ8	6γ
OPTICAL OUTPUT PORT	6	γ3	λ 10	λ11	λ 12	λ 13	λ14	λ 15	91 Y	11	7.5	λ3	74	γ2	9γ	17	γ8
OUTPU	8	γ8	γ3	λ 10	γ11	λ 12	λ13	λ14	λ 15	91 Y	11	77	γ3	74	5Υ	9γ	77
PTICAL	7	7.7	γ8	γ3	λ 10	711	λ12	λ13	λ14	λ15	λ16	۲1	γ5	73	74	75	98
Ō	9	9γ	77	γ8	γ3	λ 10	711	λ 12	λ 13	λ14	λ 15	λ16	71	72	γ3	74	γ2
	5	Υ2	97	77	γ8	79	λ 10	711	λ12	λ13	λ14	λ15	λ16	71	λ2	73	74
	4	74	75	97	77	78	79	λ 10	711	λ 12	λ 13	λ14	λ15	λ 16	71	λ2	γ3
	ဗ	λ3	74	75	97	77	78	7.9	7 10	711	λ12	λ 13	λ14	λ15	λ 16	7	7.2
	2	γ5	73	74	75	97	77	78	γ3	λ 10	711	λ 12	λ 13	λ14	λ 15	λ 16	71
	-	71	72	λ3	74	75	97	77	γ8	79	710	711	λ12	λ13	λ14	λ15	λ16
	SPECIFIC NUMBER OF NETWORK-NODE EQUIPMENT	-	2	က	4	ß	9	_	8	6	10	-	12	13	7	15	16

OPTICAL INPUT PORT

or(s): Hiromasa TANOBE, et al.
Atty. Ref.: 5259-054/NP

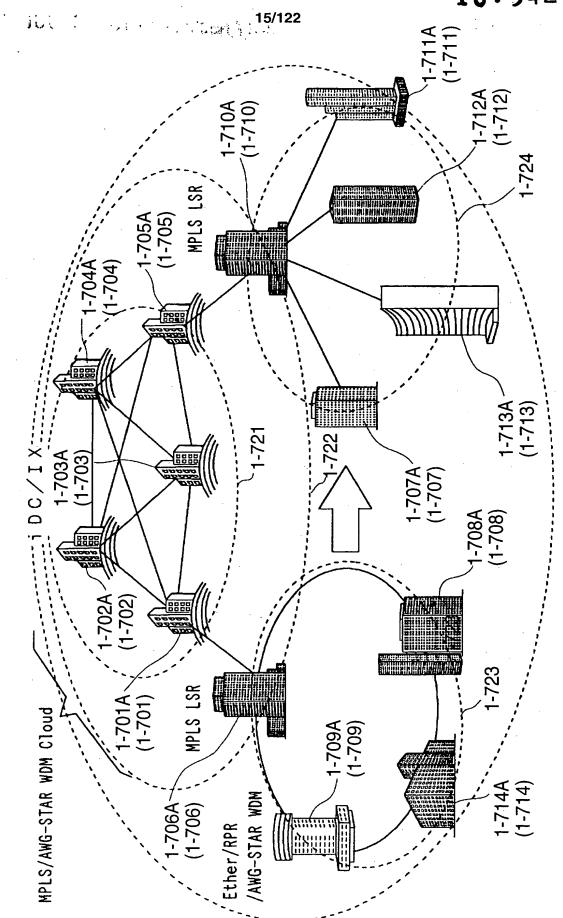


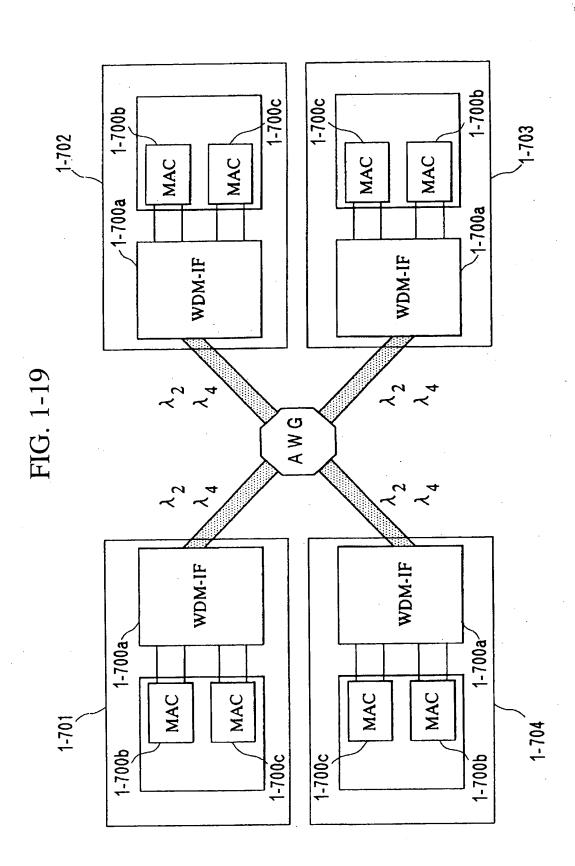
FIG. 1-17

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16

	l .	1	ł	i i	,			1		1 1							
	15	λ 15	λ 16	7.1	λ2	γ3	λ4	λ5	9γ	7.7	λ8	γ 9	λ 10	λ11	λ 12	λ 13	λ14
	14	λ14	λ 15	λ 16	7.1	7.2	λ3	74	Υ2	9٧	7٢	γ8	γ3	λ 10	λ11	λ 12	λ 13
	13	λ13	λ14	λ15	λ 16	7.1	γ5	λ3	74	Υ2	γ0	77	γ8	γ3	λ 10	λ11	λ 12
	12	λ 12	λ13	λ14	λ15	λ 16	71	λ2	γ3	74	γ2	9γ	77	8γ	6γ	λ 10	۲11
	=	γ11	λ12	λ13	λ14	λ15	λ 16	۲1	γ5	γ3	74	Υ2	9γ	17	8Υ	6γ	λ10
!	10	λ 10	λ11	λ 12	λ13	λ14	λ15	91 X	γ1	75	88	74	9 Y	9γ	14	γ8	γ3
OPTICAL OUTPUT PORT	တ	8۲	λ 10	λ11	λ 12	λ 13	7 14	λ15	λ 16	λ1	75	γ3	7 Y	9 Υ	9 Y	14	8Υ
	œ	γ8	γ3	λ10	γ11	λ12	ξl γ	7. Y	31 Y	91 Y	11	2γ	γ3	γ γ	Υ2	9γ	77
	7	77	γ8	γ3	λ10	11 Y	7 I S	J 13	X13 X14	λ15	91. Y	71	75	γ3	γ4	75	9γ
g.	9	9γ	77	λ8	γ3	λ 10	γ11	7.1.Σ	ϵ L γ	7 14	λ15	31 Y	١٢	72	73	74	75
	ည	λ5	9γ	λ7	γ8	γ3	λ 10	λ11	7 1S	λ13	7 14	31 Y	λ16	۲1	γ5	γ3	74
	4	74	Υ2	γ9	77	γ8	6 Y	λ 10	11 Y	7 12	X 13	11 Y	Υ 15	λ16	7	γ5	Υ3
	က	λ3	74	λ5	9γ	77	γ8	λ9	λ10	λ11	λ12	λ13	λ14	λ15	λ 16	۲1	75
	2	72	γ3	74	γ2	9γ	77	γ8	γ3	λ 10	λ11	λ 12	λ13	λ14	λ 15	λ 16	٧1
	-	71	7.5	λ3	74	Υ2	9γ	77	γ8	γ3	λ10	λ11	λ12	λ13	λ14	λ15	λ16
	FIC NUMBER TWORK-NODE UIPMENT	_	2	3	4	2	9		8	6	10	=	12	13	14	15	16

OPTICAL INPUT PORT



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Outer-RX Outer-TX MAC MAC MAC MAC Inner-RX Inner-TX Outer-TX Inner-RX Outer-RX Inner-TX OPTICAL OUTPUT PORT λ_2 က Outer-TX Outer-RX Inner-RX **OPTICAL INPUT PORT** Inner-TX Inner-RX Inner-TX

MAC

Outer-TX

MAC

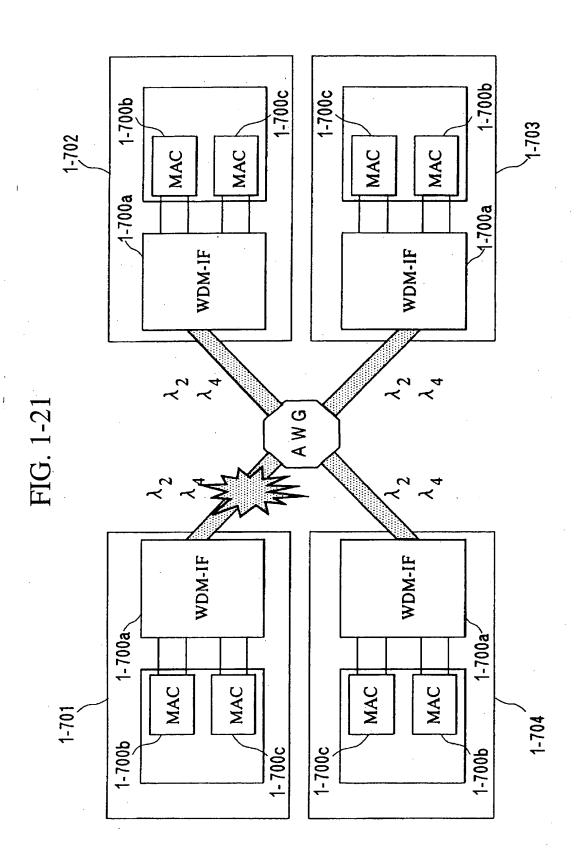
FIG. 1-2(

MAC

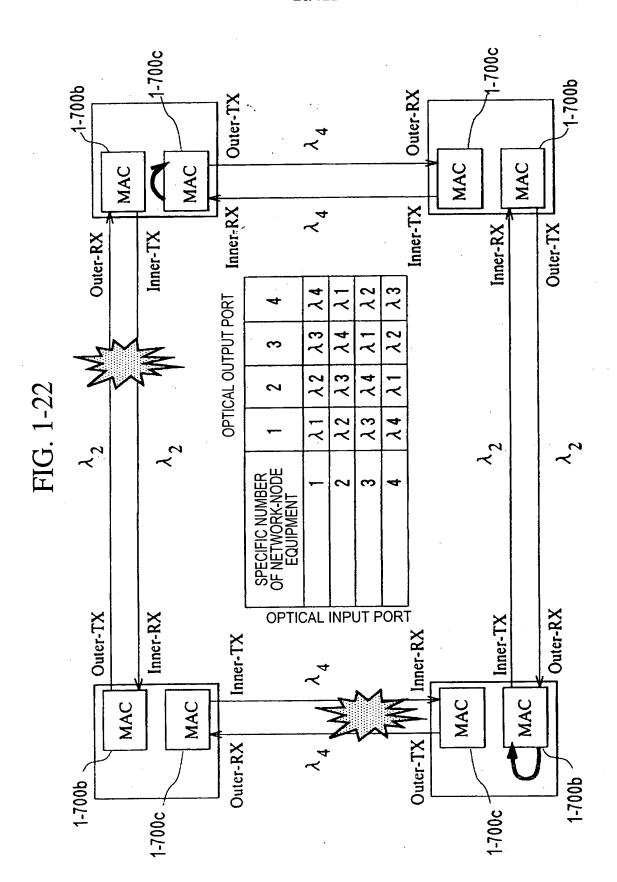
MAC

Outer-RX

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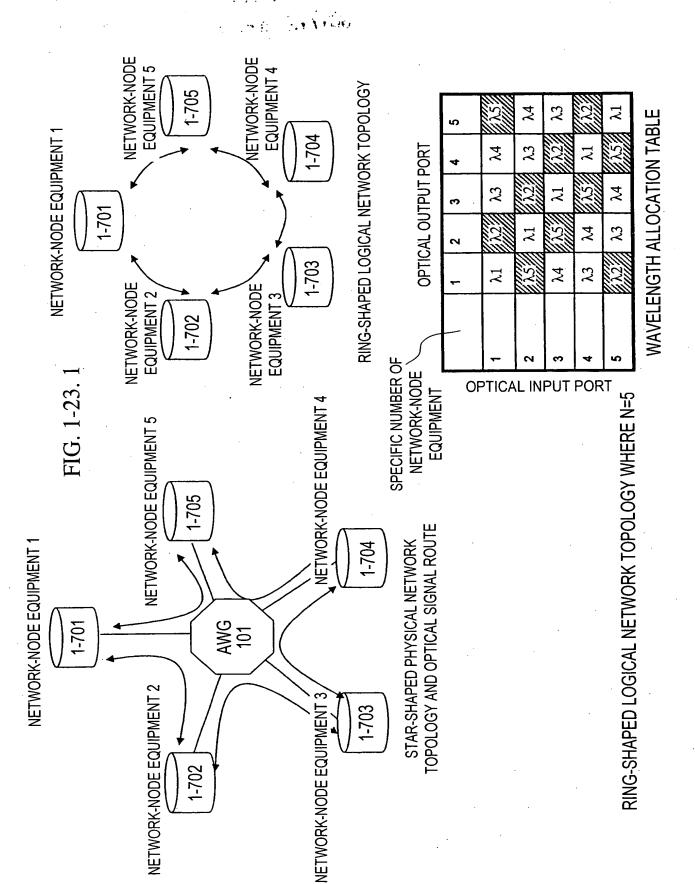


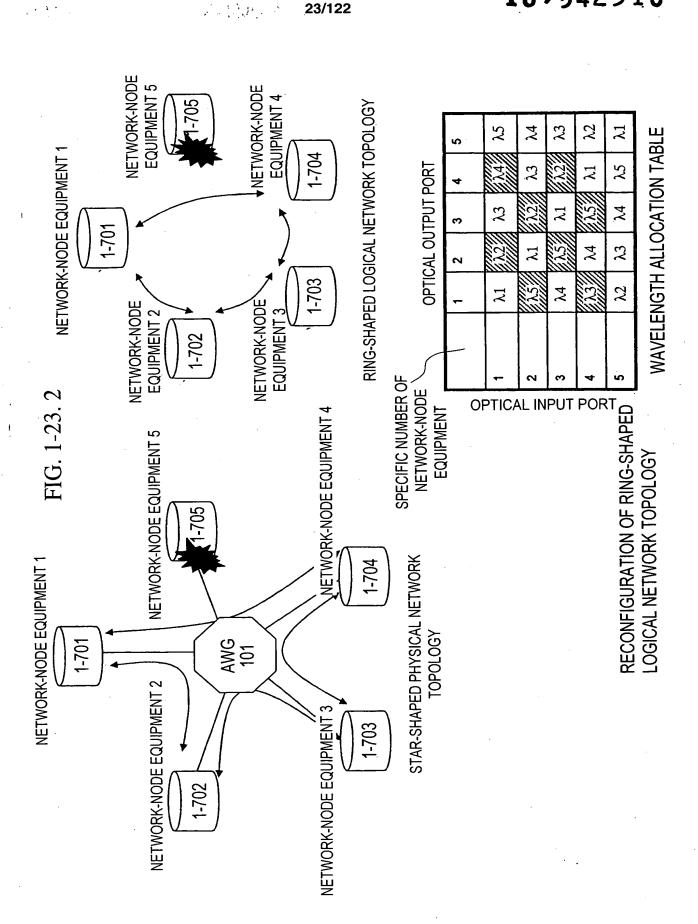
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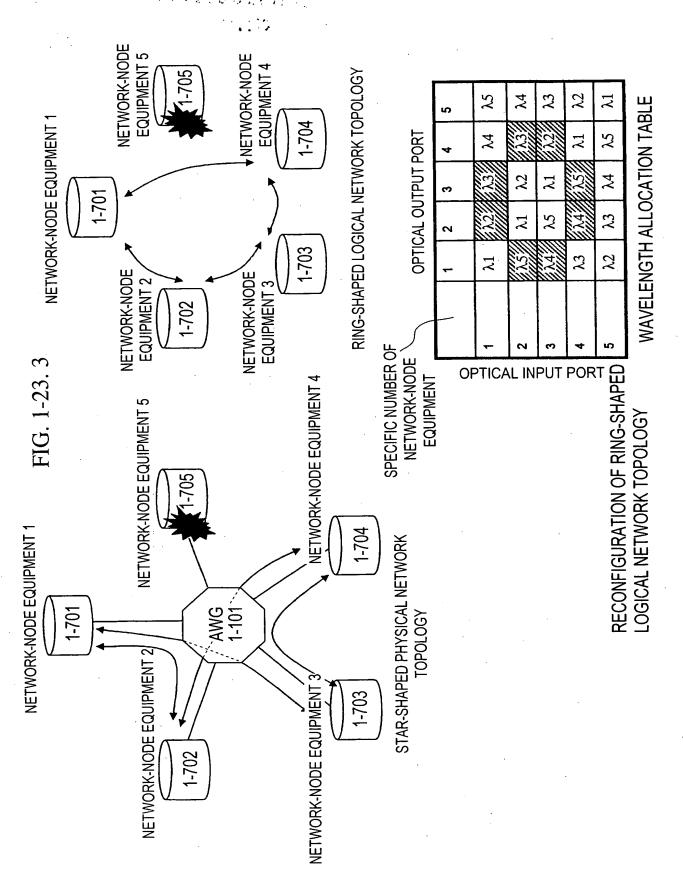
Outer-RX Outer-TX MAC MAC MAC MAC Inner-RX Inner-TX Outer-TX Inner-RX Inner-TX Outer-RX OPTICAL OUTPUT PORT က ~ λ_2 SPECIFIC NUMBER OF NETWORK-NODE EQUIPMENT OPTICAL INPUT PORT Outer-RX Outer-TX Inner-RX Inner-TX Inner-RX Inner-TX MAC Outer-TX Outer-RX

1-700c -









Title: FIBER OPTIC COMMUNICATION SYSTEM Inventor(s): Hiromasa TANOBE, et al. Atty. Ref.: 5259-054/NP 10/542316 1-1203 1-1102 1-1202 1-1002 1-502 1-303 1-1006 1-101 1-203 1-201 1-501 1-504 1-1005 11-1008 1-1001 1-608 1-601 1-1204 1-1201

Atty. Ref.: 5259-054/NP

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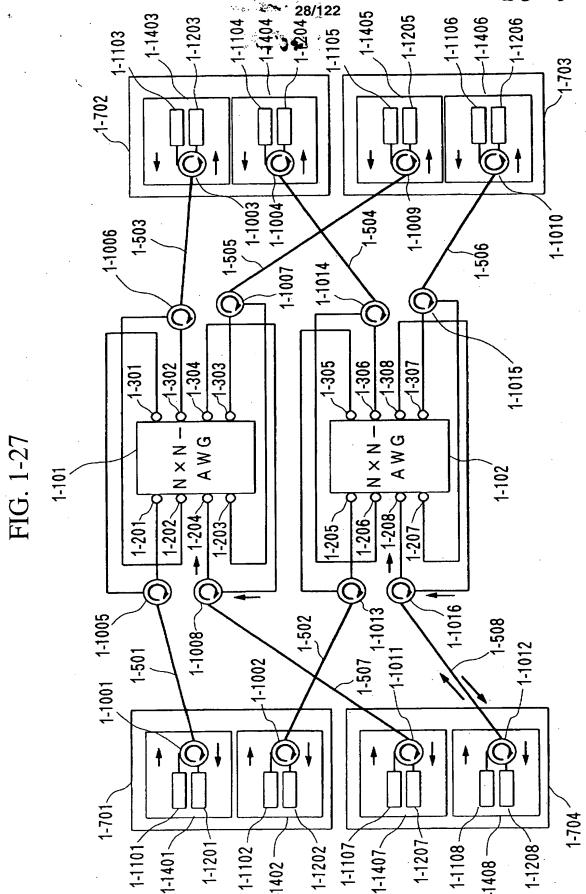
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FIG. 1-25

NETWORK-NODE EQUIPMENT (RECEIVING)

1-704 1-701 1-703 NETWORK-NODE EQUIPMENT (TRANSMITTING) 1-701 $\dot{\lambda}1$ λ3 $\lambda 4$ λ3 $\lambda 1$ λ4 1-702 λ3 λ4 $\lambda 1$ 1-703 λ3 λ4 $\lambda 1$ 1-704

Title: FIBER OPTIC COMMUNICATION SYSTEM Inventor(s): Hiromasa TANOBE, et al. Atty. Ref.: 5259-054/NP 27/122 315 -1-1503 - 1-1105 ~1-1203 -1-1206 1-1104 -1-11061-702 1-512 1-506 1-510 1-508 1-509 1-505 1-507 -1-306 -302 -305 -304 -301 AWG Z G Z X Z × ĭ X Z 1-101 1-203 1-207 1-205 1-201 1-514 1-504 1-501 1-516 1-502 1-503 -513/1-51 1-701~ 1-1207 — 1-1208-1-704 1-1108 1-1202 1-15081-1101-1-1501-1-1502-



Inventor(s): Hiromasa TANOBE, et al. Atty. Ref.: 5259-054/NP

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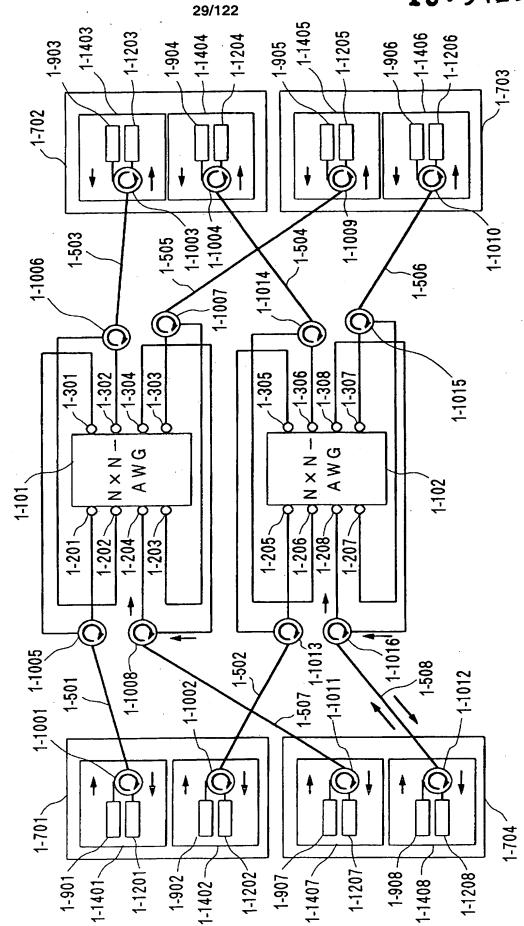
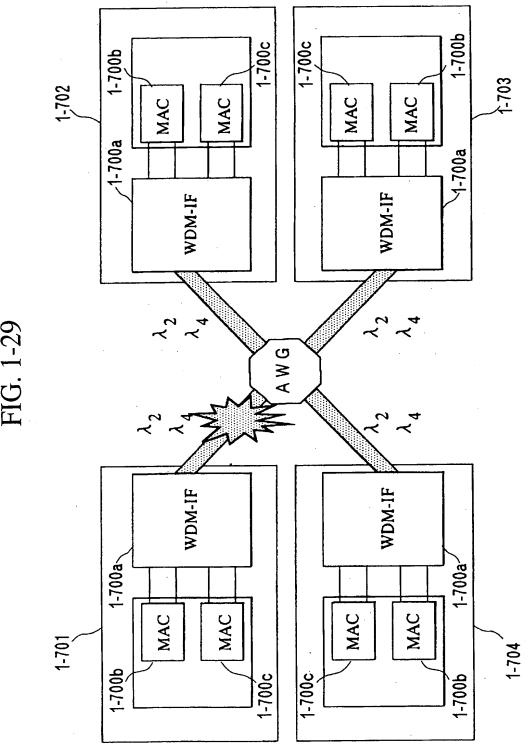


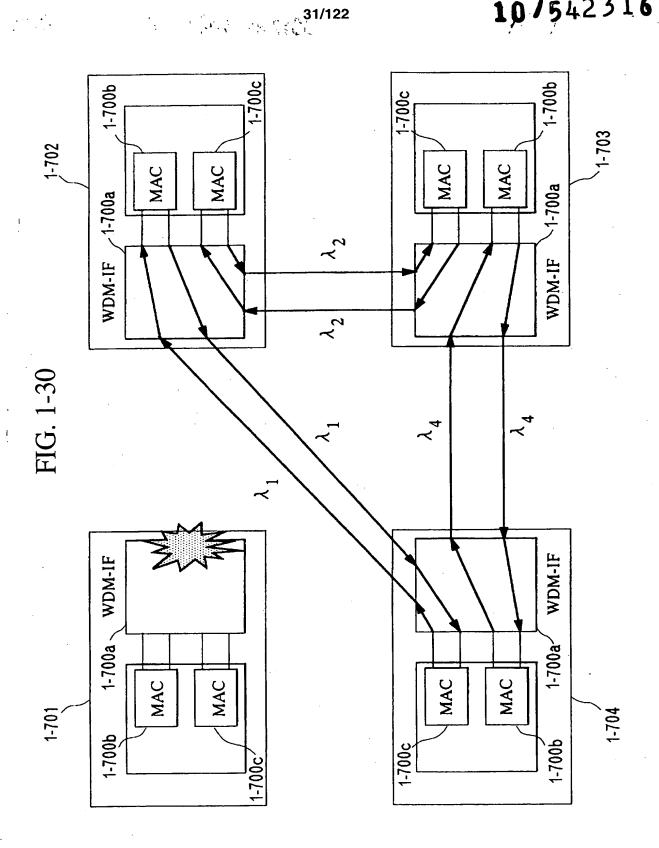
FIG. 1-28

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4. 3

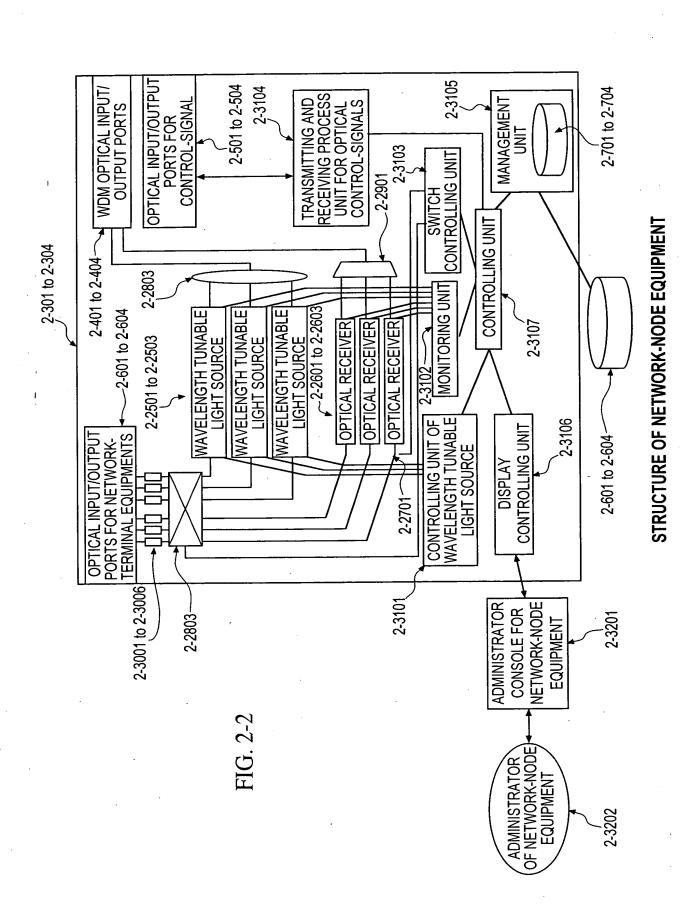


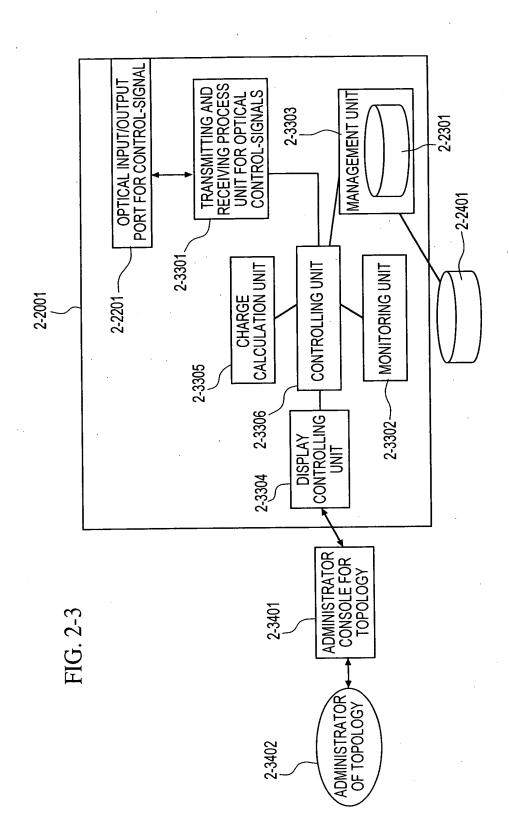
10/542316

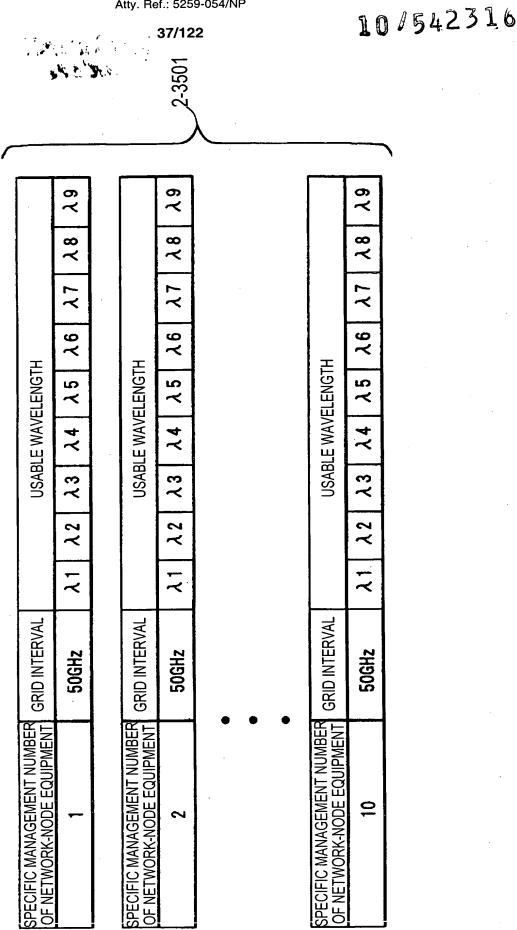


Title: FIBER OPTIC COMMUNICATION SYSTEM Inventor(s): Hiromasa TANOBE, et al. Atty. Ref.: 5259-054/NP 10/542316 32/122 1-1 1-1503 1-1203 1-1502 1-1202 902 1-903 1-607 1-1002 1-602 1-802 1-302 1-303 1-301 1-1006 1-101 1-204-1-801 -804 1-1005 11-1008 1-1001 1-601 1-608 1-1504 1-1501 1-904 1-901

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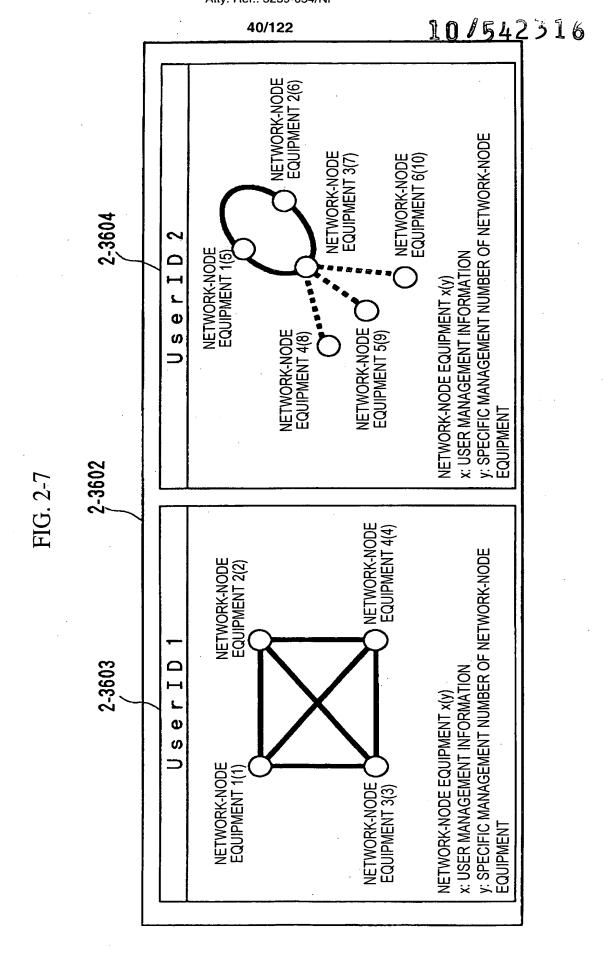
Title: FIBER OPTIC COMMUNICATION SYSTEM Inventor(s): Hiromasa TANOBE, et al.
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	γ3	6۲	6۲	γ3	γ3	γ3	۲۵	8۲	γ3	γ3
	λ8	γ8	γ8	8γ	8γ	8γ	γ8	γ8	γ8	γ8
	λ7	λ7	λ7	λ7	λ7	14	17	77	λ7	77
СТН	γ6	γ0	γ6	λ6	λ6	λ6	λ6	λ6	λ6	98
VELEN	75	Υ2	γ2	λ5	λ5	λ5	λ5	Υ5	λ5	Υ2
USABLE WAVELENGTH	74	74	λ4	74	λ4	λ4	λ4	λ4	λ4	74
USA	λ3	λ3	λ3	λ3	λ3	λ3	γ3	γ3	γ3	γ3
	λ2	λ2	λ2	λ2	γ5	77	γ5	γ5	γ5	77
	λ1	γ1	λ1	٨1	۲1	11	17	11	17	11
GRID INTERVAL	50GHz	50GHz	50GHz	50GHz	50GHz	50GHz	2H503	50GHz	50GHz	ZH503
SPECIFIC MANAGEMENT NUMBER OF NETWORK-NODE EQUIPMENT	-	2	3	4	5	9	. 1	8	G	10

						_								1													
									•		•				STAR	10	9	2	λ2	7	òk	ŏ	ð	-			
2-3601	—	 	.	 -	 -1						· 	 	.		STAR	6	2	2	۲۲.	7	0ķ	ð	ð	-			
	SH.	2	2		75 YZ	3 4	Ok Ok	Ok Ok	ok Ok	3					STAR	8	*	7	γ5	7	ŏ	g	ð				
	MESH	, ,			72/	1	0k	0k	ŏ										γ5	10	0k	٥k	0ķ				
					λ2	4	ok Ok	S,	OK					i	STAR				75	6	οķ	0k	0k				
	MESH	 -	-	-	γ5	3	0ķ	쓩	8	ဗ					IG, ST	7	3	2	77	8	0k	0k	Ok	5			
	\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\	•			γ5	2	0k	Š	ò		-				RING,				75	5	0k	ok	0 K				
		F				나	_				┝			.					γ γ	9	0K	쓩	g			L	
·.						PMEN									RING	9	2	2	77	1	ŏ	ok Ok	OK OK	2		L	
		ENT	_			EQU				۱					<u>~</u>				77	5	ŏ	ð	ok Ok			_	
		N N N	MEN			NODE			JENT	PME					RING	2	_	7	2 72	9	ğ	ğ		۱ ـ.	_	L	$\left\{ \right.$
	 ु	DE E(NO.			ORK-	 ¥		N N N	EQU		WIDT			<u>"</u>			-	2 72	2 7	ð Š	Š	s S		L	_	-
9-	Polo	X-NO	ODE			NETA	SIGN	SIGNA	DE E	ig N	差	BAND			 				12 X2	-	송	중	<u> </u>		_	_	-
FIG. 2-6	¥ 2	TWO.	X X		USE	D OF	MON.	MOM	X-X	VOR K	님	SING		!	MESH	7	7		12 Y	8	¥	š]	\vdash	├	-
H(AL NETWORK TOPOLOGY	MBER OF NETWORK-NODE EQUIPMENT	R OF NETWORK-NODE EQUIPMENT	9	ELENGTH IN USE	OTHER END OF NETWORK-NODE EQUIPMENT	TRANSMITTING STATUS OF WDM SIGNAL	TATUS OF WDM SIGNAL	OF NETWORK-NODE EQUIPMENT	KS OF NETWORK-NODE EQUIPMENT	BANDWIDTH OF LINK	FOR INCREASING BANDWIDTH			-	-	-	<u> </u>	727		Š	ğ	<u> </u>	L.	-	\vdash	$\left\{ \right.$
	AL NE	BFR (N SPN	USER ID	LENG	OTH	STAT	TATU	IN IS	S OF	ANDV	S N		 	ESH	က	65	-	72/	<u> </u>	ğ	ğ	_	1	-	├	$\frac{1}{1}$
	-10				WAVE		1NG	RECEIVING S.		N	NG B			<u>:</u>	×				72	<u> </u>	-	š	<u> </u>	J	\vdash	\vdash	1
	I I	IN IN	N N			JMBF	SMIT	SEIVI	3 ST/	TICA	ADDING	유			<u></u>	_	1	<u> </u>	 _	 	<u> </u>	L _	<u> </u>		!	ļ	1
	TYPE OF LOGI	SPECIFIC MANAGEMENT NU	SPECIFIC USER NUMBER			SPECIFIC MANAGEMENT NUMBER O	TRAN	REC	CONNECTING STATUS	NI JMBER OF OPTICAL LIN		BMIT TO HTENS I															

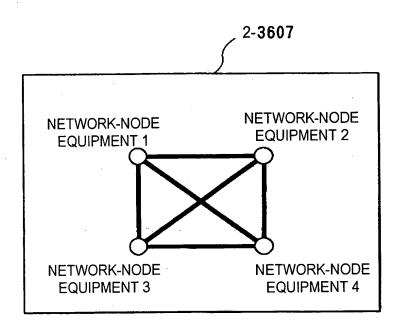
Title: FIBER OPTIC COMMUNICATION SYSTEM Inventor(s): Hiromasa TANOBE, et al. Atty. Ref.: 5259-054/NP



CHARGE	A	A	A	A	A	A	A	A	A	А
DISCOUNT	0	0	0	0	0	0	0	0	0	0
TOTAL NUMBER OF WAVELENGTH PATH LINKS	12	12	12	12	12	12	12	12	12	12
NUMBER OF INCREASING BANDWIDTH	0	0	0	0	0	0	0	0	0	0
INCREASED/DECREASED NUMBER OF NETWORK- NODE EQUIPMENTS	0	0	0	0	0	0	0	0	0	0
YEAR AND MONTH	2003.01	2003.02	2003.03	2003.04	2003.05	2003.01	2003.02	2003:03	2003.04	2003.05
USERID	-	-	_	-	-	2	2	2	2	2

TYPE OF LOGICAL NETWORK TOPOLOGY		MESH		4	MESH			MESH		_	MESH	
SPECIFIC USER NUMBER OF NETWORK- NODE EQUIPMENT		-			2	*		က			4	
WAVELENGTH IN USE	72	λ3	74	88	74	71	74	71	λ2	λ1	72	λ3
SPECIFIC MANAGEMENT NUMBER OF OTHER END OF NETWORK-NODE EQUIPMENT	2	3	4	1	3	4	4	-	2	3	-	2
TRANSMITTING STATUS OF WDM SIGNAL	8	0 k	0k	0k	0k	0k	0k	0k	0k	%	용	송
RECEIVING STATUS OF WDM SIGNAL	송	송	0k	40	40	0k	0k	0k	8	0k	9 8	8 K
CONNECTING STATUS OF NETWORK-NODE EQUIPMENT	ok	0k	송	0k	0k	9 K	9k	송	0k	9k	송	송
NUMBER OF OPTICAL LINKS OF NETWORK-NODE EQUIPMENT		က			က			က			8	
ADDING BANDWIDTH OF LINK												
LENGTH OF TIME FOR INCREASING BANDWIDTH												

FIG. 2-10



<u>ш</u>					
CHARG	A	A	¥	A	A
DISCOUNT CHARGE	0	0	0	0	0
NUMBER OF TOTAL NUMBER OF INCREASING WAVELENGTH PATH BANDWIDTH	12	12	12	12	12
NUMBER OF INCREASING BANDWIDTH	0	0	0	0	0
INCREASED/DECREASED NUMBER OF NETWORK-NODE EQUIPMENTS	0	0	0	0	0
YEAR AND MONTH	2003.01	2003.02	2003.03	2003.04	2003.05
USERID	-	-		•	-

Inventor(s): Hiromasa TANOBE, et al. Atty. Ref.: 5259-054/NP

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FIG. 2-13

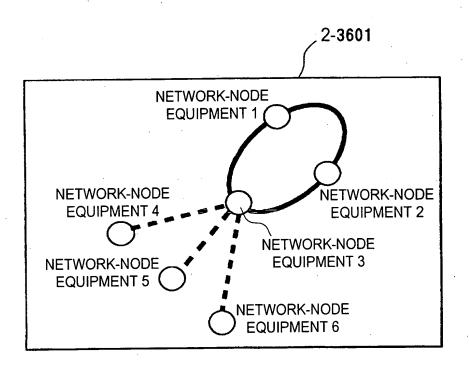
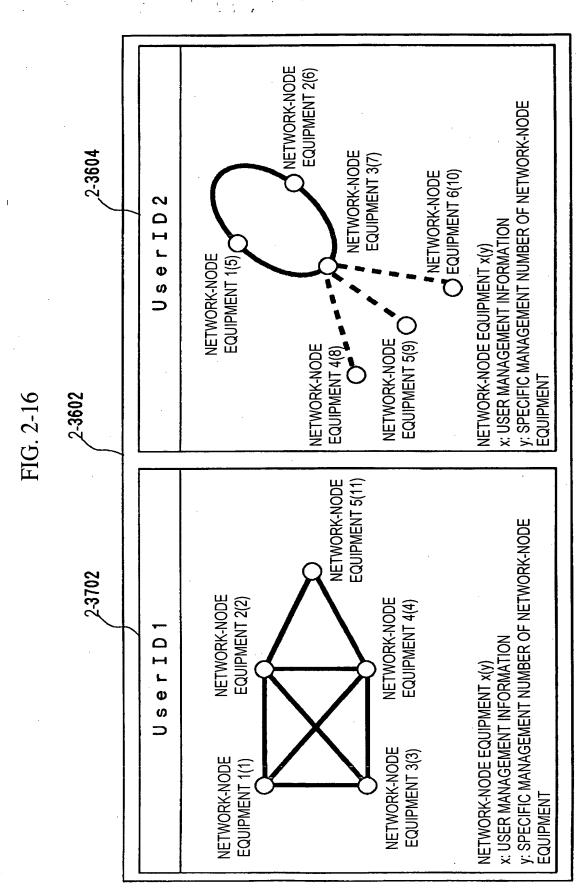


FIG. 2-14

USERID	YEAR AND MONTH	INCREASED/DECREASED NUMBER OF NETWORK- NODE EQUIPMENTS	NUMBER OF INCREASING BANDWIDTH	TOTAL NUMBER OF WAVELENGTH PATH DISCOUNT LINKS	DISCOUNT	CHARGE
2	2003.01	0	0	12	0	A
2	2003.02	0	0	12	0	A
2	2003.03	0	0	12	0	4
2	2003.04	0	0	12	0	A
2	2003.05	0	0	12	0	¥

Title: FIBER OPTIC COMMUNICATION SYSTEM Inventor(s): Hiromasa TANOBE, et al. Atty. Ref.: 5259-054/NP

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2-3	1, SATR	2	2	-	4 A1		ok o	OK 0	0k 0	4		4							ув,	6	8	Š	0k			
	MESH,				13 Y	3									SATR		3	2	γq	8	Ok Ok	OK	0k	5		
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	β	EEQ	QUIPI			RK-NC	IAL		IWORK-NODE EQUIPMENT	NETWORK-NODE EQUIPMENT		LENGTH OF TIME FOR INCREASING BANDWIDTH			SATR	=	2	_	7	7	L	ŏ	<u> </u>	~	_	
10	TWORK TOPOLOGY	GON-	DE E			JOWT:	JS OF WDM SIGNAL	IGNA	DE EC	JODE	NK	3AND	j		S				۲ ۲	2	Ľ	ð		Ц_		
.G. 2-15	S D	NORK	RK-NC		USE	OF NE	WDW.	NDM S	K-NO	JRK-N	OFL	SING			~				17	Ξ	ð	충	-	ł		
Ġ.	TWOR	NET	TWO	USER ID	TH IN USE			OF V	rwor	JETW	ADDING BANDWIDTH OF LINK	SEAS			SATR	*	4	_	73	2		충	<u> </u>	4		
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		MAN	SPECIFIC USER NUMBER OF NETWORK-NODE EQUIPMENT			EMEN			CONNECTING STATUS OF NE	NUMBER OF OPTICAL LINKS OF N	:	LE			2				74	4	ğ	8	ŏ			
		SPECIFIC MANAGEMENT NUMBER OF NETWORK-NODE EQUIPMENT	SPS			ANAG			Ö	NOM							•	•	-	•		•	•	-	•	
		SP.				ECIFIC MANAGEMENT NUMBER OF OTHER							li													
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	CHARGE	A	A	A.	В	В	N.	A	A	¥	A	
	DISCOUNT CHARGE	0	0	0	0 ,	, 0	0	′ 0	0	0	0	
	TOTAL NUMBER OF WAVELENGTH PATH LINKS	12	12	,12,	/ 14	/ 14 /	ZJ/′	., 12	.12	,, 12	12	
	NUMBER OF INCREASING BANDWIDTH	0	0	0	0	0	0	0	0	, 0	/ / 0	2-3704
	INCREASED/DECREASED NUMBER OF NETWORK-NODE EQUIPMENTS	0	0	0-	\ 1 \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \)	0_	`\ 0	`\ 0	0	0	
-	YEAR AND MONTH	2003.01	2003.02	2003.03	2003.04	2003.05	2003.01	2003.02	2003.03	2003.04	2003.05	
	USERID	-	-	-	-	-	2	2	2	2	2	·

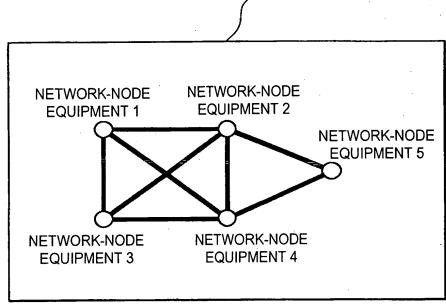
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2-3705				74	3	6	송	송			
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	I I	MEGA	-	γ3	3	0k	90	0ķ	3		
				75	2	0k	yo	0k			
	TYPE OF LOGICAL NETWORK	TOPOLOGY	SPECIFIC USER NUMBER OF NETWORK-NODE EQUIPMENT	WAVELENGTH IN USE	SPECIFIC MANAGEMENT NUMBER OF OTHER END OF NETWORK-NODE EQUIPMENT	TRANSMITTING STATUS OF WDM SIGNAL	RECEIVING STATUS OF WDM SIGNAL	CONNECTING STATUS OF NETWORK- NODE EQUIPMENT	NUMBER OF OPTICAL LINKS OF NETWORK-NODE EQUIPMENT	ADDING BANDWIDTH OF LINK	LENGTH OF TIME FOR INCREASING BANDWIDTH

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FIG. 2-19

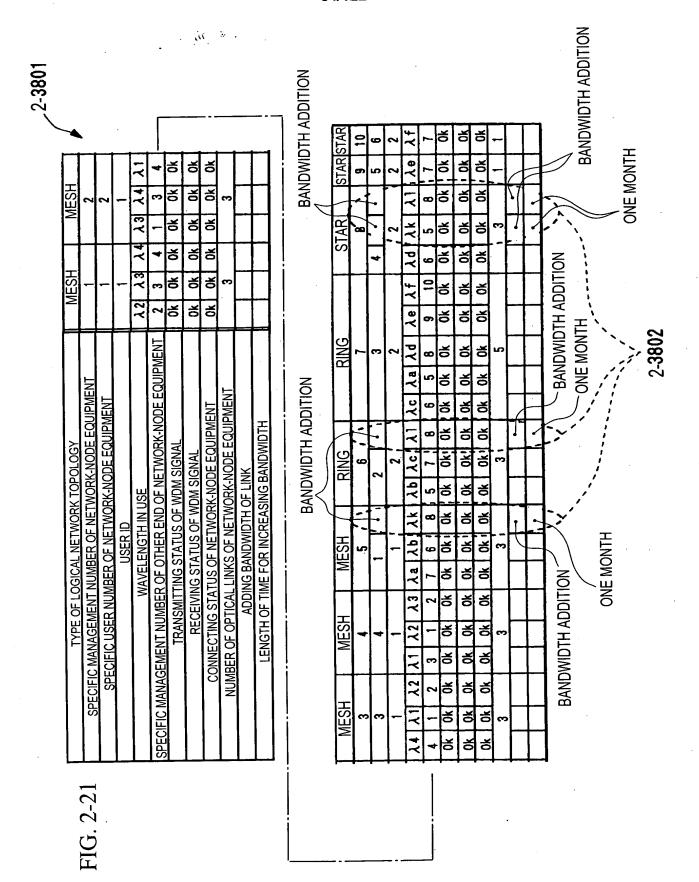
2-3708



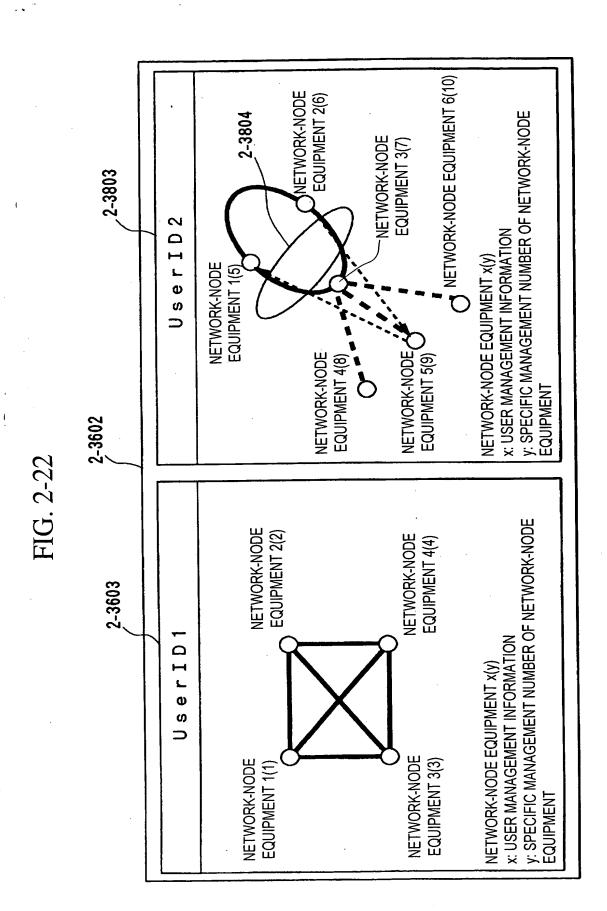
Title: FIBER OPTIC COMMUNICATION SYSTEM Inventor(s): Hiromasa TANOBE, et al. Atty. Ref.: 5259-054/NP

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1		-					1
	CHARGE	A	A	A	, B	8	
	DISCOUNT	0	0	. 0	0	0	
	TOTAL NUMBER OF WAVELENGTH PATH LINKS	12	12	12	141	(14)	
•	NUMBER OF INCREASING BANDWIDTH	0	0	0	0	0	2-3710
	INCREASED/DECREASED NUMBER OF NETWORK- NODE EQUIPMENTS	0	0	0	(1)	11,4	
	YEAR AND MONTH	2003.01	2003.02	2003.03	2003.04	2003.05	
	USER ID	-	-	1	.	-	
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		_						_					
CHARGE	A	A	A	A	¥	А	A	¥	À	() ()			
DISCOUNT CHARGE	0	0	0	0	0	0	0	0	0	0	,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,		
TOTAL NUMBER OF WAVELENGTH PATH LINKS	12	12	12	12	12	12	12	12	,12,	(16)		2- 3806	
NUMBER OF INCREASING BANDWIDTH	0	0	0	0	0	0	0	0	0-	(1)			
INCREASED/DECREASED NUMBER OF NETWORK- NODE EQUIPMENTS	0	0	0	0	0	0	0	0	0	0			
YEAR AND MONTH	2003.01	2003.02	2003.03	2003.04	2003.05	2003.01	2003.02	2003.03	2003.04	2003.05			
USERID		-	-	_	-	2	2	2	2	2			

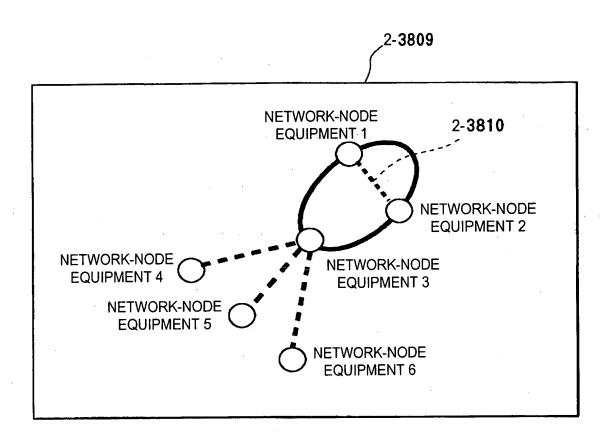
Title: FIBER OPTIC COMMUNICATION SYSTEM Inventor(s): Hiromasa TANOBE, et al.
Atty. Ref.: 5259-054/NP

			Inve	ntor(s At	s): Hir ty. Ref	omas f.: 525	a I AN 59-054	/NP	et al.		•	1 10	<i>]</i> [. 4.2	3	16
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2-3807				λf)	9	Š	0k	ð					,	BANDWIDTH ADDITION		
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	NOIL	ე ე			2		0k (0k (H ADE		BAN		
	BANDWIDTH ADDITION	RING	3	Pγ	4	(0k	 		5			TOIM	H \			
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2							<u> </u>						ō			
FIG. 2-24		TYPE OF LOGICAL NETWORK TOPOLOGY	SPECIFIC USER NUMBER OF NETWORK-NODE EQUIPMENT	WAVELENGTH IN USE	SPECIFIC MANAGEMENT NUMBER OF OTHER END OF NETWORK-NODE EQUIPMENT	TRANSMITTING STATUS OF WDM SIGNAL	RECEIVING STATUS OF WDM SIGNAL	CONNECTING STATUS OF NETWORK- NODE EQUIPMENT	NUMBER OF OPTICAL LINKS OF NETWORK-NODE EQUIPMENT	ADDING BANDWIDTH OF LINK	LENGTH OF TIME FOR INCREASING BANDWIDTH	BANDWIDTH ADDITION				

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FIG. 2-25



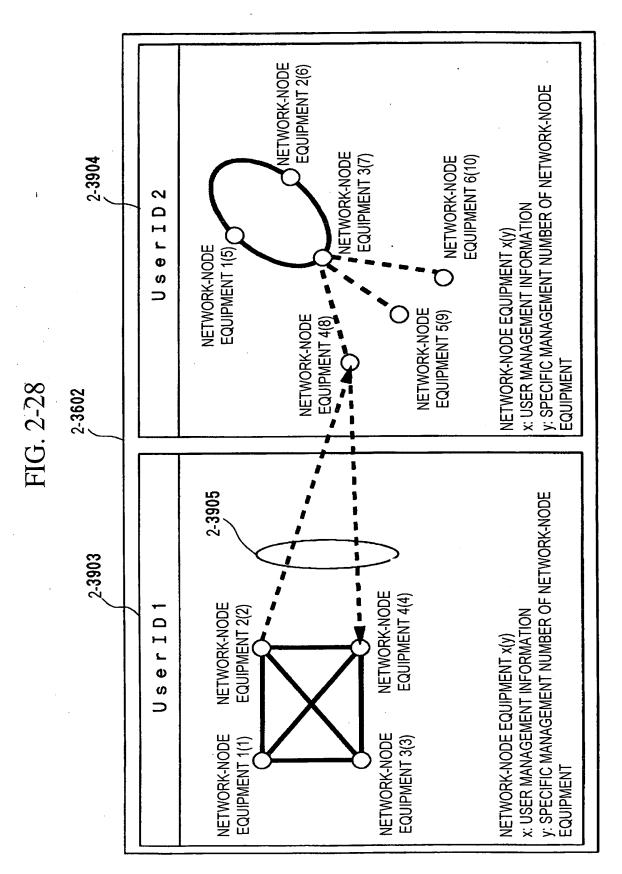
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		7	7 7 7 7 7 7 7 7 7 7 7 7 7 7 7 7 7 7 7 7	2-3811		
USER ID	YEAR AND MONTH	INCREASED/DECREASED NUMBER OF NETWORK- NODE EQUIPMENTS	NUMBER OF INCREASING BANDWIDTH	TOTAL NUMBER OF WAVELENGTH PATH LINKS	DISCOUNT	CHARGE
2	2003.01	0	0	12	0	A
2	2003.02	0	0	12	0	A
2	2003.03	0	0	12	0	A
2	2003.04	0	٥,	12	0	Å
2	2003.05	0	(1)	(16)	0	(C)
)/ }		.,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,	
				2-3812		·

Title: FIBER OPTIC COMMUNICATION SYSTEM Inventor(s): Hiromasa TANOBE, et al.

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													8					c Aa		k Ok	k					<i> </i>
												ı	BANDWIDTH ADDITION	_	H	┝	-	γς γς	\vdash	Ok Ok	Ok Ok	0k 0k	_			/
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MESH	-	-	-	73	3	OK	ok 	ò	3								\vdash	۲ <u>۹</u> ۷	9	_	0k (0k (-	ONE MONTH
_				Υ2	2	9¢	0K	0k					BAN	RING	വ	-	7	λa /	\vdash	o S	0k	-	2		┝	2-3902
					IENT								[F	7	, ,	-	ر ۲	 8		0k	-	-	_	1	7
	E				WORK-NODE EQUIPMENT				<u>,_</u>					_	-	┢╌		/ ٤٧	2		Oķ.			+		
	UIPME	MENT			ODE E			ENT	PMEN.					MESH	*	4	-	/27	_	Š	Ŗ	0k	2		\vdash	NOL ;
λSO		QUIP			JRK-N	AL		EQUIPMENT	EQUI		NDWIDTH		S S					۲۱	3	OK	0k	OK.				H ADDITION
	Š N-X	ODE			7	1 SIGNAL	SIGNAL	ODE E(-NODE	X	BAND			卜	-	<u> </u>		γ5,	2	ğ	ok K	OK				
RK TO	Š	ORK-N		USE	D OF I	F WDI	WDM 8	RK-NC	NORK	10FL	SING		HH.	MESH	က	m	-	11	-	0k	ŏ	0k	က			BANDWIDT
DWT	l l l l	NETW	USER ID	WAVELENGTH IN USE	ER EN	TUSO	IS OF	ETWC	F NET	WIDTH	VCRE/		BANDWIDTH ADDITION	≥				74	4	a S	ğ	ŏ				BA
A S	MBER	R OF	l isi	ELEN(F OTH	S STA	STATL	SOFN	NKS O	BAND	FOR II		-BA		:	-		λj	8	0k	OK F	OK 🖁		•		T H
TYPE OF LOGICAL NETWORK TOPOL	N	UMBE		WAV	BER O	TRANSMITTING STATUS OF WDM SIG	RECEIVING STATUS OF WDM SIGNAL	TATU	SAL LII	ADDING BANDWIDTH OF LINK	LENGTH OF TIME FOR INCREASING BAN		\		1		-	۲۱	4	Ok (0k	0k		7		ONE MONTH
Í,	GEME	JSER I			NOM	RANSA	RECE	LING S	OPTI(THOF		İ	MESH	2	~	-	74	3	0k	0k	0k	2			N N N
	SPECIFIC MANAGEMENT NUMBER OF NETWORK-NODE EQUIPMENT	SPECIFIC USER NUMBER OF NETWORK-NODE EQUIPMENT			MENT	Ĭ.		CONNECTING STATUS OF NETWORK-NODE	NUMBER OF OPTICAL LINKS OF NETWORK-NODE EQUIPMENT		LENG							۲3	-	0k	ð	ð			_	Ĭ
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	l g				FIC M																					BANDWIDTH ADDITION
					SPECIFIC MANAGEMENT NUMBER OF OTHER END OF NET								<u></u>				_			i						BANI

Title: FIBER OPTIC COMMUNICATION SYSTEM Inventor(s): Hiromasa TANOBE, et al. Atty. Ref.: 5259-054/NP



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				2-3907	Y									
CHARGE	K	V	V	¥	ပ	V	¥	¥	¥	e.	\	``.	<u> </u>	2-3908
DISCOUNT CHARGE	0	0	0	0	6	0	0	0	ဝဴ	(\a)	<i>`</i>	.′		2-3
TOTAL NUMBER OF WAVELENGTH PATH LINKS	12	12	12	12	16	12	12	12	12	12				
NUMBER OF INCREASING BANDWIDTH	0	0	0	0		0	0	0	0	0				
INCREASED/DECREASED NUMBER OF NETWORK- NODE EQUIPMENTS	0	0	0	0	0	0	0	0	0	0				
YEAR AND MONTH	2003.01	2003.02	2003.03	2003.04	2003.05	2003.01	2003.02	2003.03	2003.04	2003.05				
USER ID	1	1	1	-	1	2	2	2	2	2				

FIG. 2-29

Atty. Ref.: 5259-054/NP

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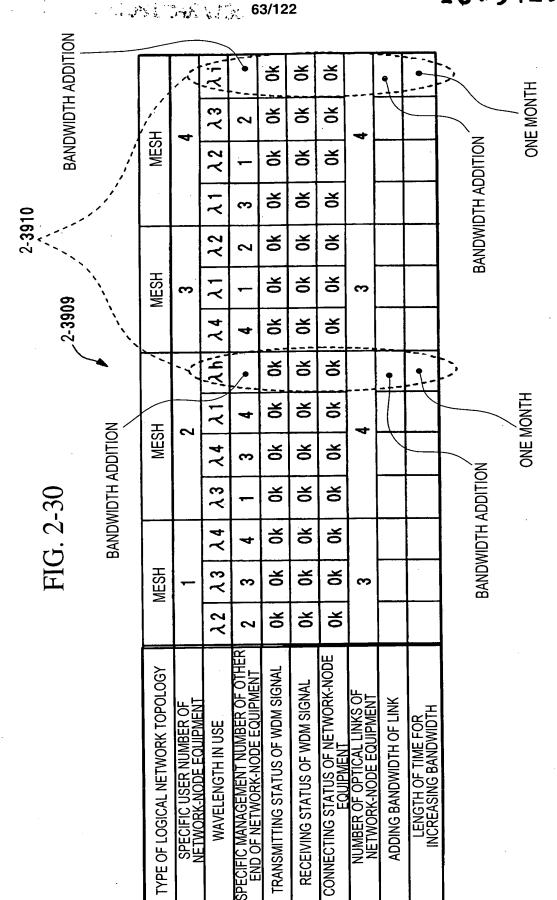
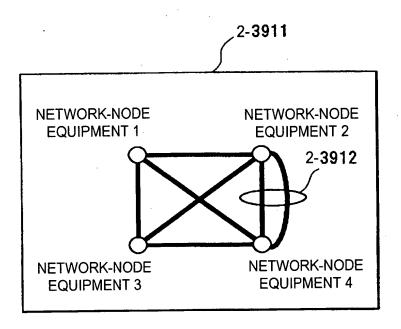


FIG. 2-31



Inventor(s): Hiromasa TANOBE, et al. Atty. Ref.: 5259-054/NP

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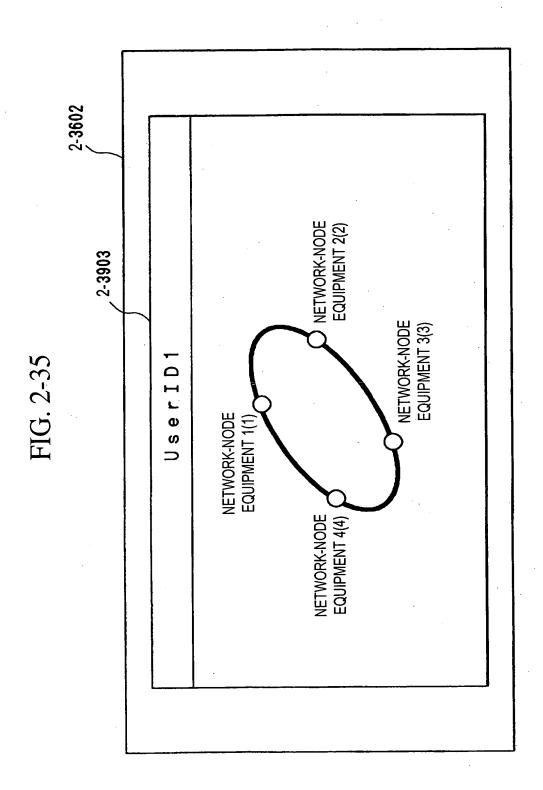
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ші		- 1			<u>^</u>	
CHARGE	A	A	V	A	ပ	
DISCOUNT	0	0	0	0	0	
TOTAL NUMBER OF WAVELENGTH PATH DISCOUNT CHARGE LINKS	12	12	12	12	16	
NUMBER OF INCREASING BANDWIDTH	0	0	0	0	1	2-3914
INCREASED/DECREASED NUMBER OF NETWORK- NODE EQUIPMENTS	0	0	0	0	0	
YEAR AND MONTH	2003.01	2003.02	2003.03	2003.04	2003.05	
USERID	-	-	-		-	

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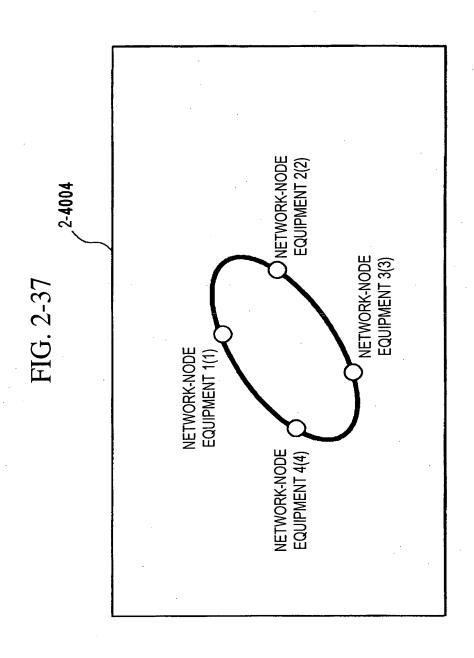
DISCOUNT CHARGE × 8 TOTAL NUMBER OF WAVELENGTH PATH LINKS 12 2 2 12 42 NUMBER OF INCREASING BANDWIDTH 0 0 0 INCREASED/DECREASED NUMBER OF NETWORK-NODE EQUIPMENTS 0 0 0 0 YEAR AND MONTH 2003.03 2003.04 2003.05 2003.02 2003.01 **USER ID** ~ ~

TYPE OF LOGICAL NETWORK TOPOLOGY	. 🖫	RING	RING	5 S	R	RING	RING	ပြာ
SPECIFIC MANAGEMENT NUMBER OF NETWORK-NODE EQUIPMENT		_		2		3		4
SPECIFIC USER NUMBER OF NETWORK-NODE EQUIPMENT		1	:	2		3		4
USER ID		1		+		-		1
WAVELENGTH IN USE	9γ	γα	γα	λβ	YB YY	λγ	44	8 Y
SPECIFIC MANAGEMENT NUMBER OF OTHER END OF NETWORK-NODE EQUIPMENT	-	2	-	က	2	4	3	-
TRANSMITTING STATUS OF WDM SIGNAL	9K	0k	0k	0ķ	송	0k	0ķ	0K
RECEIVING STATUS OF WDM SIGNAL	y0	¥0	NO	0k	OK	0k	0k	0ķ
CONNECTING STATUS OF NETWORK-NODE EQUIPMENT	9k	0k	0k	0k	0k	96	90	9K
NUMBER OF OPTICAL LINKS OF NETWORK- NODE EQUIPMENT		2		2		2		2
ADDING BANDWIDTH OF LINK		·						
LENGTH OF TIME FOR INCREASING BANDWIDTH								



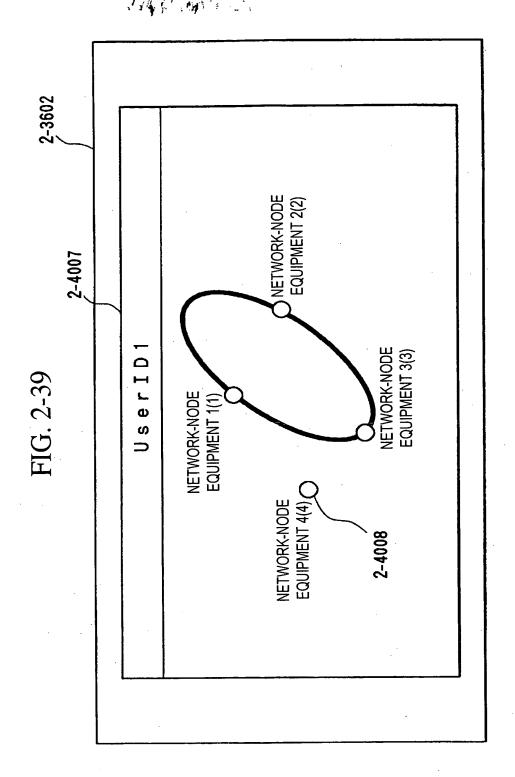
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I YPE OF LOGICAL NETWORK TOPOLOGY	Ē	KING	ב צ	SING	E	2	Z	2
SPECIFIC USER NUMBER OF NETWORK-NODE EQUIPMENT				2		က		4
WAVELENGTH IN USE	λδ	λα	λα	18 12 12 1B 1B	λβ	λγ	λγ	λδ
SPECIFIC MANAGEMENT NUMBER OF OTHER END OF NETWORK-NODE EQUIPMENT	-	2	-	3	2	4	က	-
TRANSMITTING STATUS OF WDM SIGNAL	9K	송	충	송	송	0k	송	8
RECEIVING STATUS OF WDM SIGNAL	9K	송	송	š	송	9¢	8	송
CONNECTING STATUS OF NETWORK-NODE EQUIPMENT	0k	송	쏭	0k	0k	0k	9K	송
NUMBER OF OPTICAL LINKS OF NETWORK-NODE EQUIPMENT		2		2		2		2
ADDING BANDWIDTH OF LINK								
LENGTH OF TIME FOR INCREASING BANDWIDTH								



Off 6 9 RING 송 RING ~ 3 3 Ø Ø 송 송 2 Ø 숭 숭 Ø 숭 숭 송 6 ENGTH OF TIME FOR INCREASING BANDWIDTH SPECIFIC USER NUMBER OF NETWORK-NODE EQUIPMENT SPECIFIC MANAGEMENT NUMBER OF OTHER END OF NETWORK-NODE EQUIPMENT CONNECTING STATUS OF NETWORK-NODE EQUIPMENT NUMBER OF OPTICAL LINKS OF NETWORK-NODE EQUIPMENT TYPE OF LOGICAL NETWORK TOPOLOGY **TRANSMITTING STATUS OF WDM SIGNAL** SPECIFIC MANAGEMENT NUMBER OF NETWORK-NODE EQUIPMENT RECEIVING STATUS OF WDM SIGNAL ADDING BANDWIDTH OF LINK **MAVELENGTH IN USE USER ID**

FIG. 2-38



Title: FIBER OPTIC COMMUNICATION SYSTEM

Inventor(s): Hiromasa TANOBE, et al. Atty. Ref.: 5259-054/NP

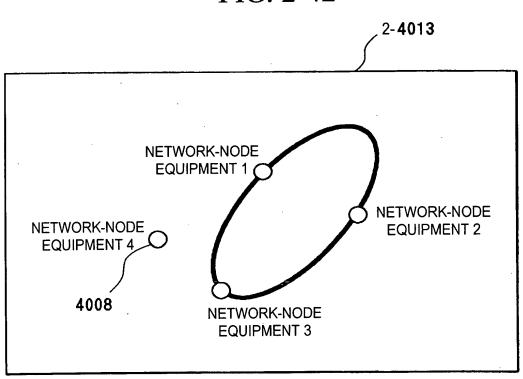
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						Δ		٠
	CHARGE	Н	ш	ш	ш	<u>. </u>	·	
	DISCOUNT CHARGE	0	0	0	0	00	1 1 1 1 1 1 1	
1	TOTAL NUMBER OF WAVELENGTH PATH LINKS	8	80	8	8	9		,
	NUMBER OF INCREASING BANDWIDTH	0	0	0	0	0		2-4010
	INCREASED/DECREASED NUMBER OF NETWORK- NODE EQUIPMENTS	0	0	0	0	l>		
	YEAR AND MONTH	2003.01	2003.02	2003.03	2003.04	2003.05		
	USERID	-		·	-	•		

TYPE OF LOGICAL NETWORK TOPOLOGY	₽	RING	R	RING	RING	١Ğ	RING	lG	
SPECIFIC USER NUMBER OF NETWORK-NODE EQUIPMENT		+		2		3		4	
WAVELENGTH IN USE	78	γα	λα	λα λβ	λβ	λγ	λγ	7.5	2.4011
SPECIFIC MANAGEMENT NUMBER OF OTHER END OF NETWORK-NODE EQUIPMENT		2	-	3	2	4	,,,	,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,	1104-7,
TRANSMITTING STATUS OF WDM SIGNAL	S	ð	쓩	0k	9K	ð	, off	Off	
RECEIVING STATUS OF WDM SIGNAL	0k	96	8	0k	0k	9k	NG	NG	
CONNECTING STATUS OF NETWORK-NODE EQUIPMENT	9 S	8	0k	OK.	0k	9K	, Ok	0k	
NUMBER OF OPTICAL LINKS OF NETWORK-NODE EQUIPMENT		2		2		2	ممر	, 0	
ADDING BANDWIDTH OF LINK							•	1	
LENGTH OF TIME FOR INCREASING BANDWIDTH									

FIG. 2-42



Title: FIBER OPTIC COMMUNICATION SYSTEM Inventor(s): Hiromasa TANOBE, et al. Atty. Ref.: 5259-054/NP

4RGE	E	u,	ш	ш			
SCOUNT CH	0	0	0	0	0		15
TOTAL NUMBER OF WAVELENGTH PATH DISCOUNT CHARGE LINKS	8	8	8	8	9		2-4015
NUMBER OF INCREASING BANDWIDTH	0	0	0	0	0		
INCREASED/DECREASED NUMBER OF NETWORK- NODE EQUIPMENTS	0	0	0	0	1		
YEAR AND MONTH	2003.01	2003.02	2003.03	2003.04	2003.05		
USER ID	-		-	-	-	·	

Inventor(s): Hiromasa TANOBE, et al. Atty. Ref.: 5259-054/NP

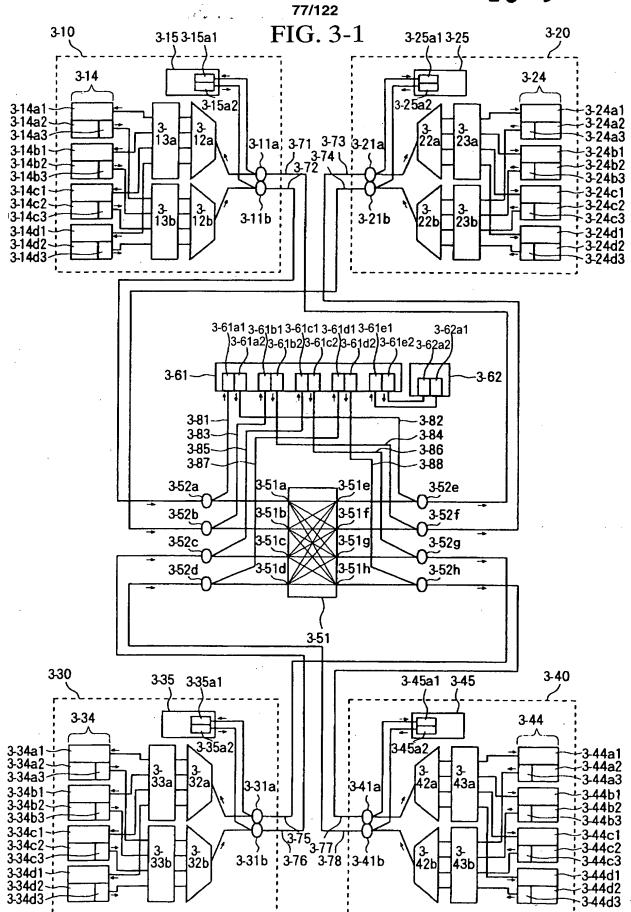


FIG. 3-2A

OPTICAL OUTPUT PORT

FIG. 3-2B

OPTICAL INPUT PORT

/					
		1	2	3	4
	•	(3-51e)	(3-51f)	(3-51g)	(3-51h)
	1 (3-51a)	λ1	λ2	λ3	λ4
	2 (3-51b)	λ4	λ1	λ2	λ3
	3 (3-51c)	λ3	λ4	λ1	λ2
	4 (3-51d)	λ2	λ3	λ4	λ1

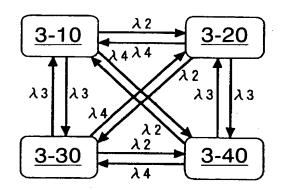


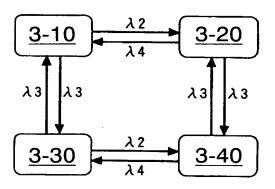
FIG. 3-3A

FIG. 3-3B

OPTICAL INPUT PORT

. 2 3 4 (3-51e) (3-51f)(3-51g)(3-51h)λ1 λ2 λ3 λ4 (3-51a) λ4 λ1 λ2 λ 3 (3-51b)λЗ λ4 λ1 λ2 (3-51c)λ2 λ3 λ4 λ1 (3-51d)

OPTICAL OUTPUT PORT





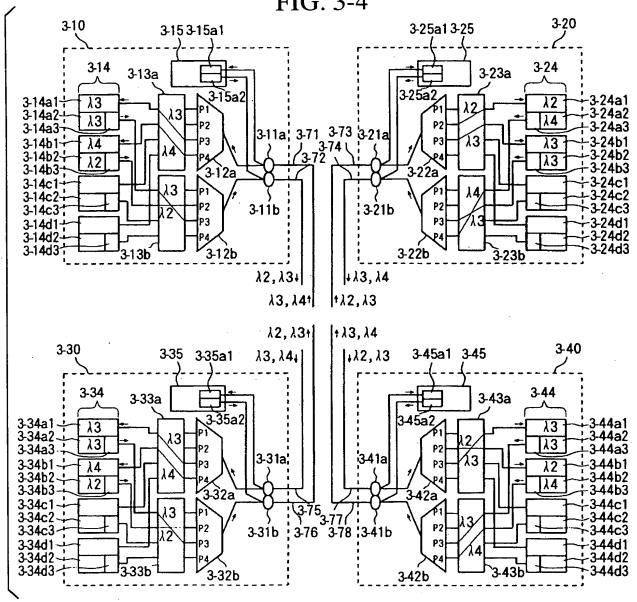


FIG. 3-5A

FIG. 3-5B

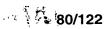
OPTICAL INPUT PORT

,OPTICAL	OUTPL	IT	PORT
		<i>_</i> ,	1 0111

/		1 110/12 0			
$\left\{ \right.$,	1 (3-51e)	2 (3-51f)	3 (3-51g)	4 (3-51h)
	1 (3-51a)	λ1	λ2	λ3	λ4
	2 (3-51b)	λ4	λ1.	λ2	λ3
	3 (3-51c)	λ3	λ4	λ1	λ2
	4 (3-51d)	λ2	λ3	λ4	λ1

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Atty. Ref.: 5259-054/NP



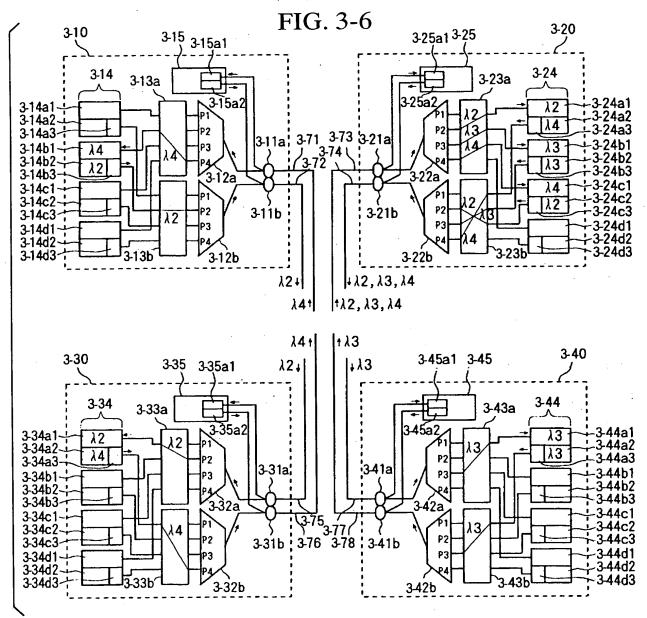
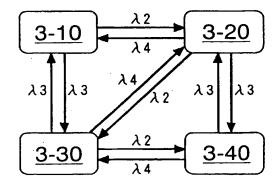


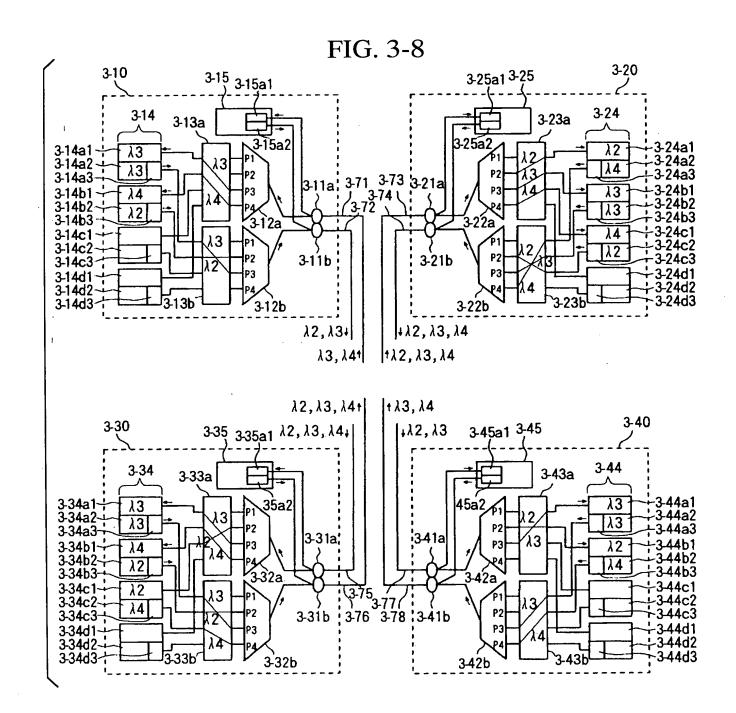
FIG. 3-7A OPTICAL INPUT PORT

FIG. 3-7B

OPTICAL OUTPUT PORT 2 3 (3-51f)(3-51h)(3-51e)(3-51g)λ1 λ2 λЗ λ4 (3-51a)λ2 λЗ λ4 λ1 (3-51b)3 λ1 λ4 λ2 λЗ (3-51c)λ 1 λ 3 $\lambda 4$ λ2 (3-51d)



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FIG. 3-9

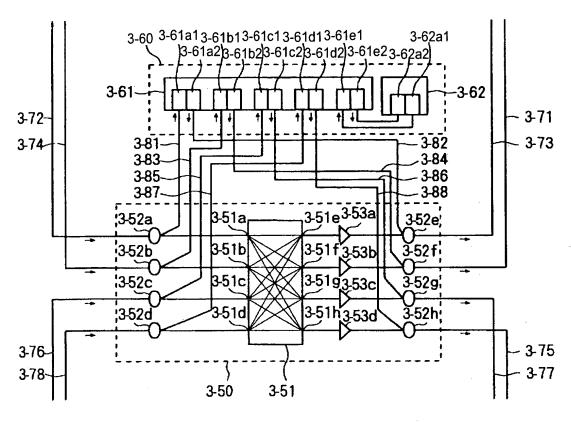


FIG. 3-10

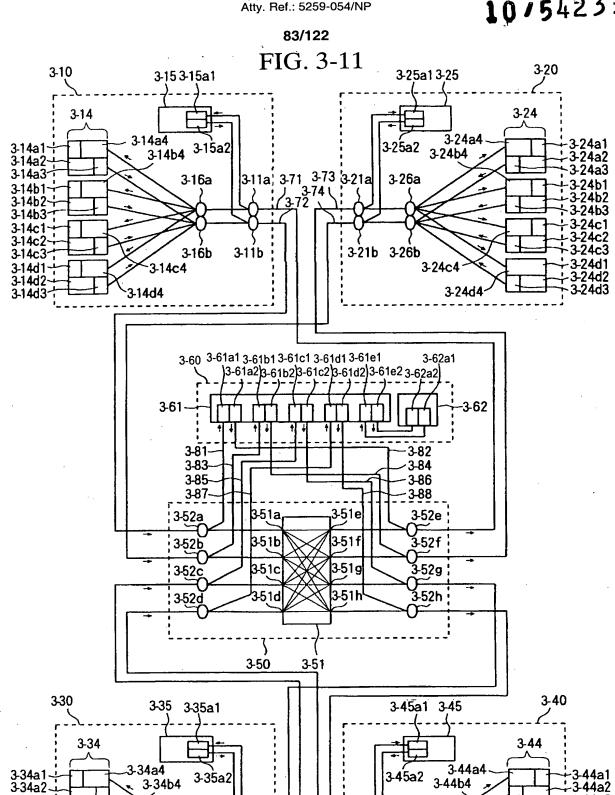
OPTICAL INPUT PORT

)	OF	PTICAL OU	JTPUT PC	RT	
7	7	1 (3-51e)	2 (3-51f)	3 (3-51g)	4 (3-51h)
	1 (3-51a)	λ1	λ2	λ3	λ4
	2 (3-51b)	λ2	λ3	λ4	λ5
	3 (3-51c)	λ3	λ4	λ5	λ6
	4 (3-51d)	λ4	λ5	λ6	λ7

Title: FIBER OPTIC COMMUNICATION SYSTEM

Inventor(s): Hiromasa TANOBE, et al.

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3-44b4

3-44c4

3-44d4·

341a

3-76 3-78 3-41b 3-46b

3-46a

3-44a2

3-44a3

-3-44b1 3-44b2

+3-44b3

-3-44c1

-3-44c2

3-44c3

+3-44d1

+344d2

3-44d3

3-34b4

3-36a

3-36b

3-34c4

3-34d4

3-31a;

3-31b

3.75 3.77

3-34a3-

3-34b1-

3-34b2-

3-34b3-3-34c1~

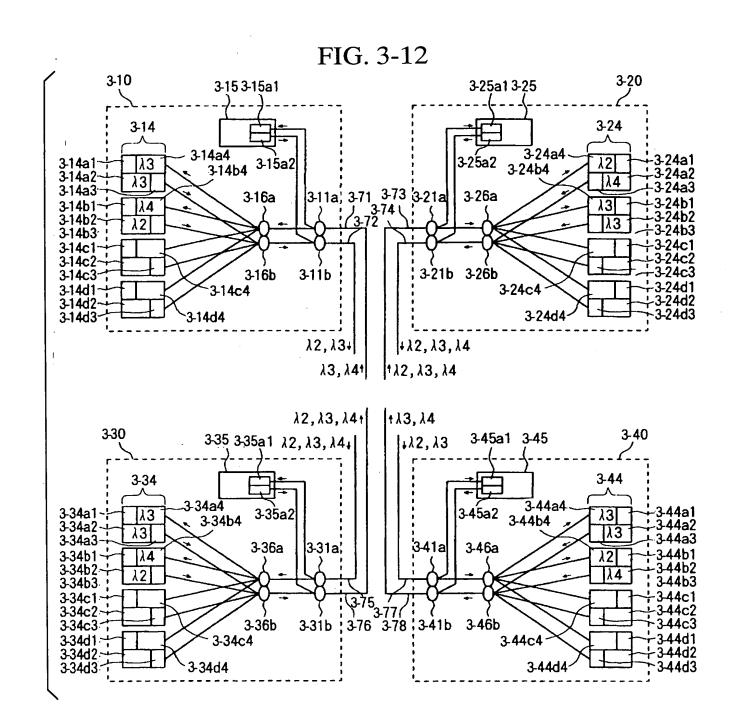
3-34c2-

3-34c3-

334d1-

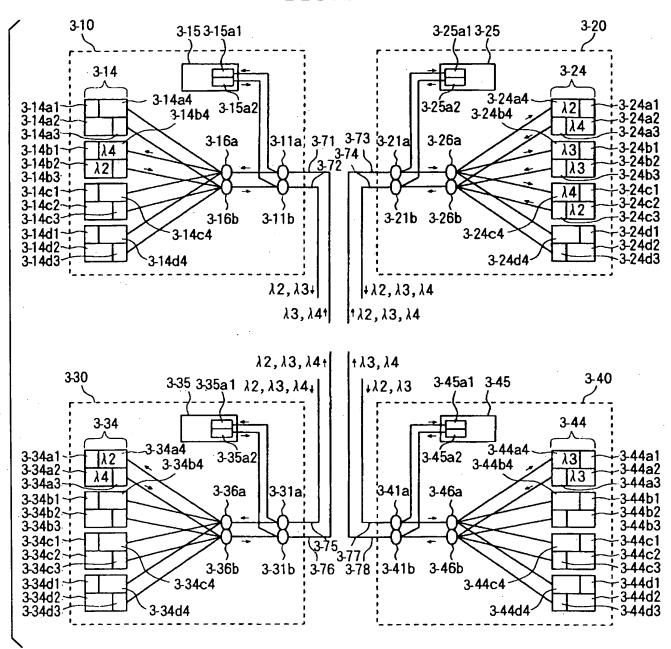
3-34d2-3-34d3-

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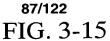
FIG. 3-13

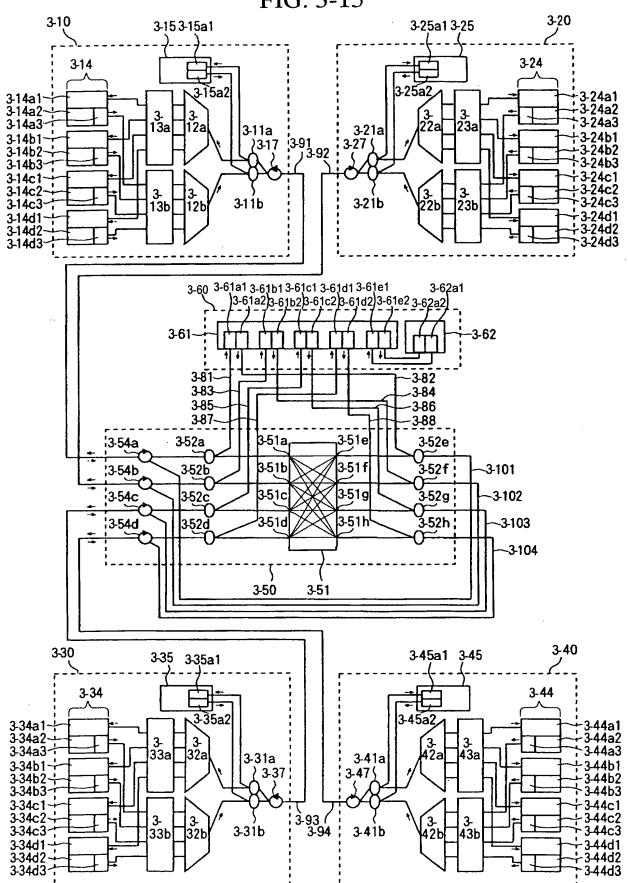


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FIG. 3-14 3-10 3-20 3-153-15a1 3-25a13-25 3-24 3-14 3-14a4 3-24a4 -3-24a1 -3-24a2 λ2 λ3 3-25a2 3-14a1" 3-15a2 3-14b4 3-24b4 3-14a2λ3 λ4 +3-24a3 3-14a3-3-11a, 3-71 3-73 3-21a +3-24b1 3-26a 3-16a 3-14b1-13 λ4 -3-24b2 3-14b2λ3 λ2 +3-24b3 3-14b3 ; +3-24c1 3-14c1 3-14c2 λ4 +3-24c2 λ2 -3-24c3 3-21b 3-26b 3-14c3-3-16b 3-11b -3-24d1 3-14d1-3-14c4 3-24c4 -3-24d2 3-14d2~ 3-24d3 3-14d3-3-24d4 3-14d4 λ2,λ3↓ +λ2,λ3,λ4 λ3, λ41 1,12,13,14 $\lambda 2, \lambda 3, \lambda 4 +$ +λ3,λ4 3-30 3-40 3-45a1 3-45 3-35 3-35a1 \(\lambda_1\)\(\lambda_1\)\(\lambda_1\) ,λ2,λ3 3-44 3-34 -3-34a4 3-44a4 3-45a2 3-44a1 3-34a1-3-35a2 3-44b4 3-34a2+ 3-34b4 -3-44a2 λ3 λ3 + 3-44a3 3-34a3~ 3-46a 3-36a |3-31a¦ ÷344b1 3-34b1 + 3-34b2 + λ2 λ4 3-44b2 λ2 3-44b3 3-34b3 ; 3-34c1 -- 3-34c2 --+3-44c1 λ2 -3-44c2 -3-44c3 λ4 3-34c3 3-31b | 3-76 3-78 | 3-41b 3-46b 3-36b -344d1 -344d2 3-34d1+ 3-34c4 3-44c4 3-34d2 -3-34d3-1 3-44d3 3-34d4 3-44d4

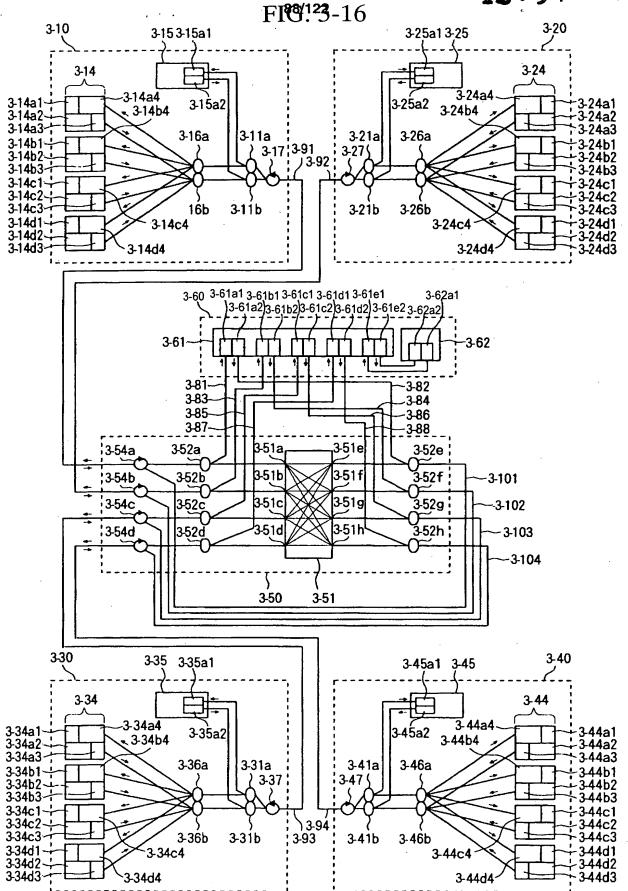
Inventor(s): Hiromasa TANOBE, et al. Atty. Ref.: 5259-054/NP

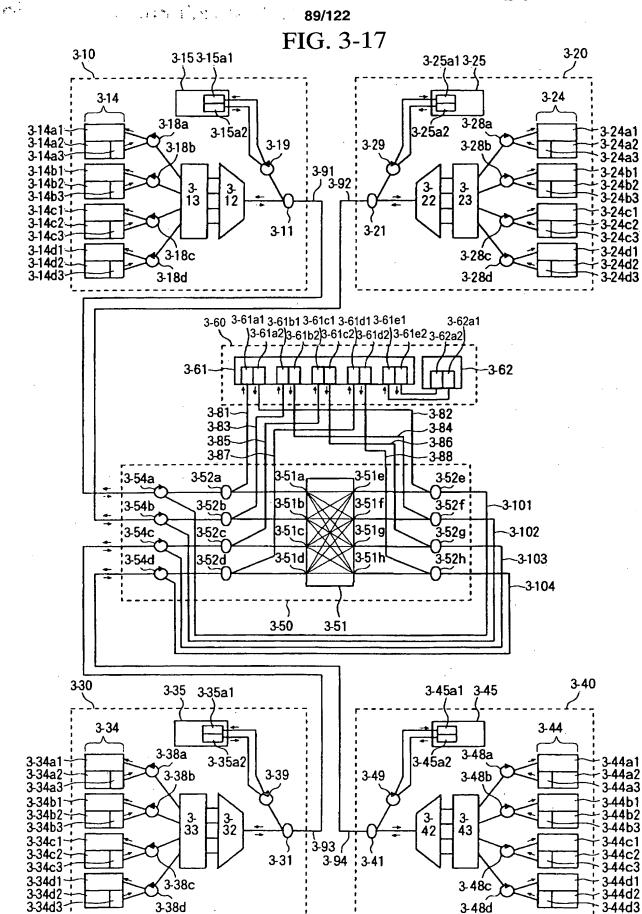




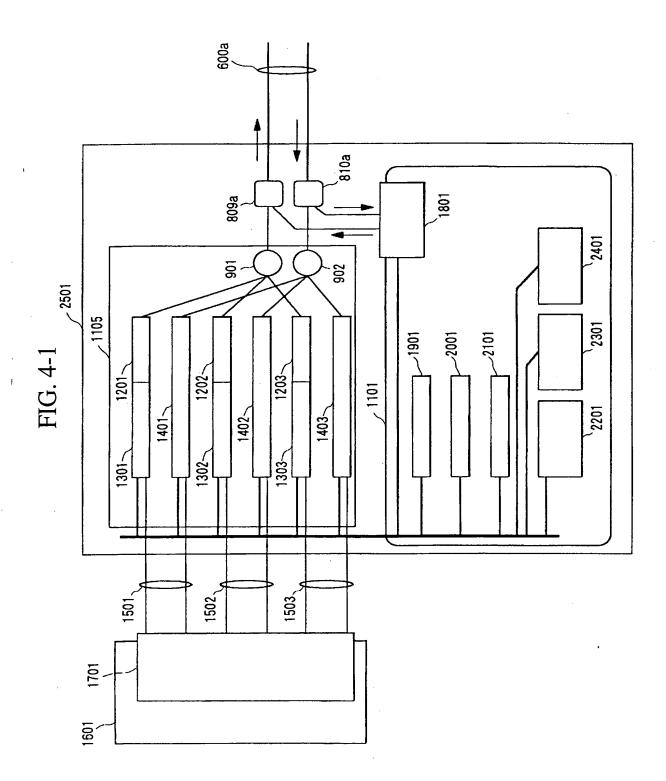
Title: FIBER OPTIC COMMUNICATION SYSTEM Inventor(s): Hiromasa TANOBE, et al.

Inventor(s): Hiromasa TANOBE, et al. Atty. Ref.: 5259-054/NP

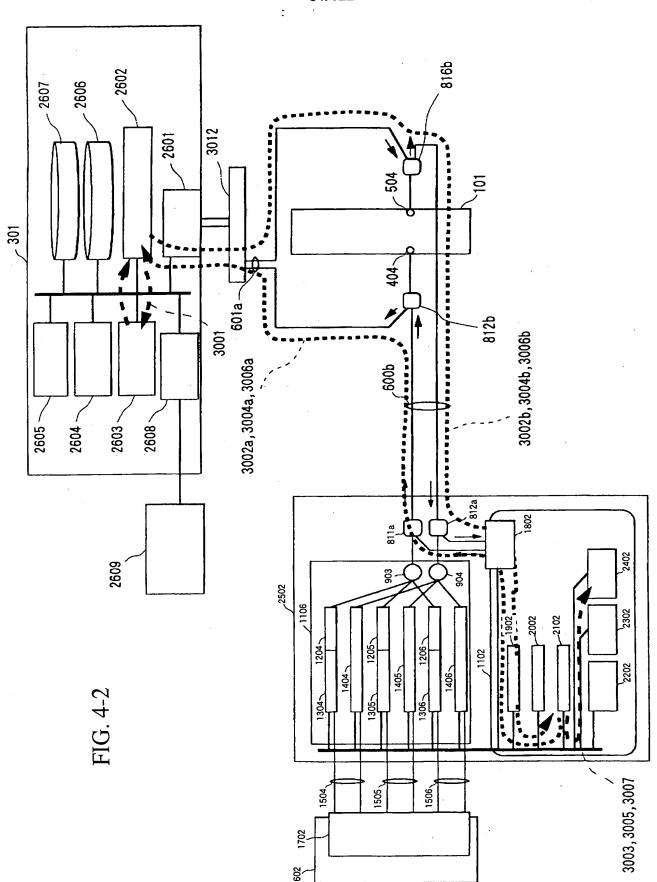




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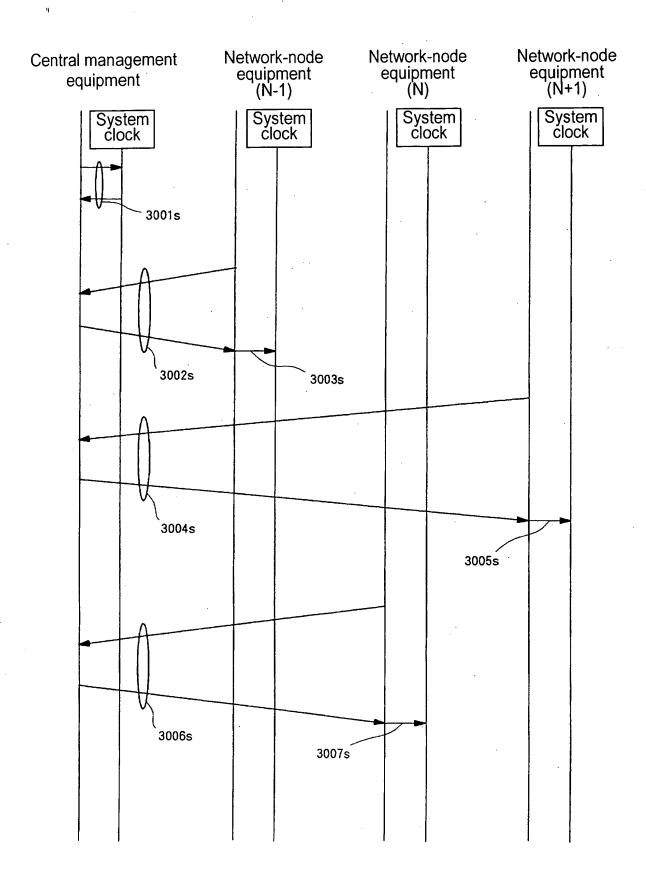
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10/542316

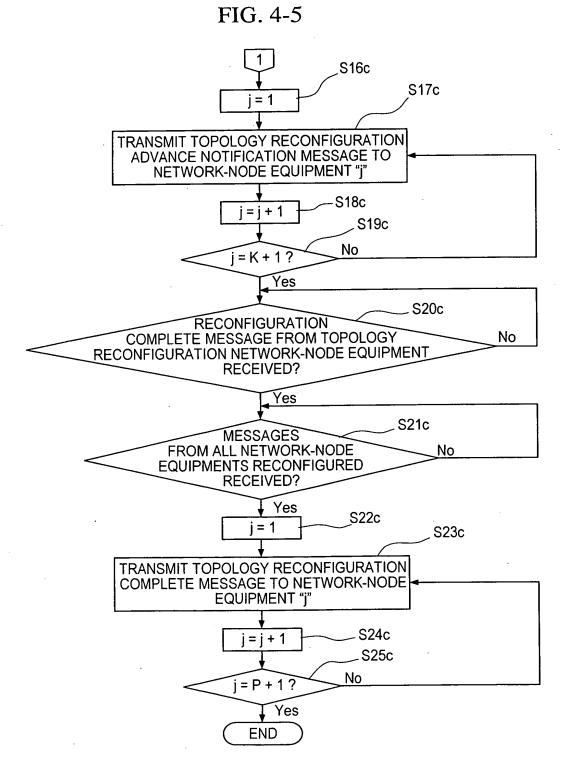
92/122 FIG. 4-3

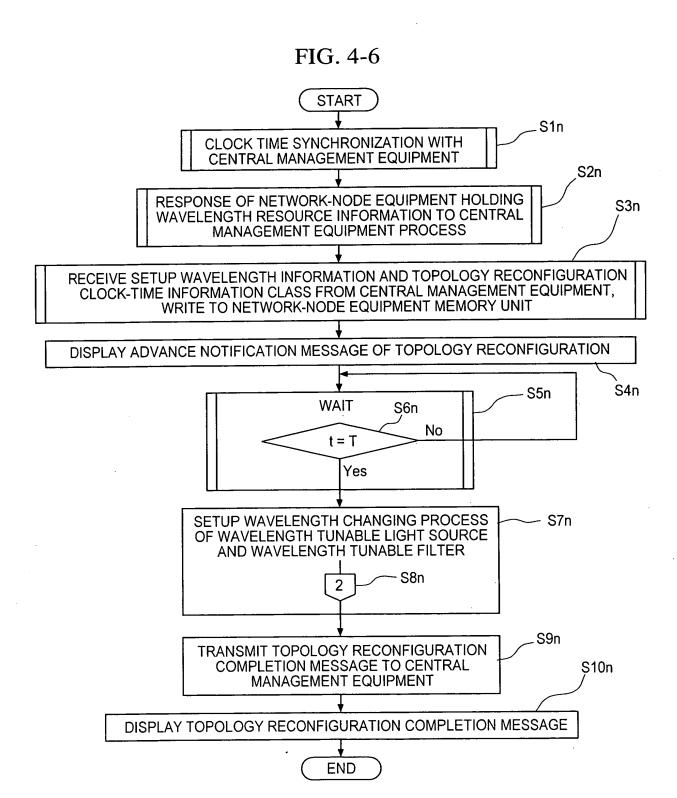


10/542316 Atty. Ref.: 5259-054/NP 93/122 FIG. 4-4 **START** -S1c NETWORK-NODE EQUIPMENT CLOCK-TIME SYNCHRONIZATION PROCESS NETWORK-NODE EQUIPMENT WAVELENGTH RESOURCE -S2c INFORMATION COLLECTING PROCESS SPECIFY TOPOLOGY TO BE RECONFIGURED / \$2.1c S2.2c TNDIVIDUAL **NETWORK-NODE EQUIPMENT** SELECTION/WHOLE NETWORK-NODE EQUIPMENT SELECTION. INPUT NEW TOPOLOGY **TYPE** S3.1c S3c-SPECIFY NETWORK-NODE EQUIPMENT "I" TO BE RECONFIGURED INPUT NEW TOPOLOGY TYPE **DISPLAY ERROR** i = 1S4c S5c S4.1ci = 1S7.1c MESSAGE ON TOPOLOGY INPUT WAVELENGTH PATH ADMINISTRATOR BETWEEN NETWORK-NODE CONSOLE EQUIPMENT REQUIRED FOR NEW S6.1c **TOPOLOGY CONFIGURATION** WAVELENGTH RESOURCE REQUIRED No DISPLAY ERROR MESSAGE FOR NEW PATH IN ON TOPOLOGY NETWORK-NODE EQUIPMENT ADMINISTRATOR CONSOLE EXISTS? S7.1c S7c ¥ Yes WAVELENGTH RESOURCE REQUIRED i = i + 1S8.1c No FOR NEW PATH IN NETWORK-NODE EQUIPMENT No i = N + 1?EXISTS? S6c Yes ¥ Yes S8c i = i + 1-S9c No. i = P + 1? ^TYes S10c SPECIFY TOPOLOGY RECONFIGURATION CLOCK-TIME (t=T) S12c – S11c i = 1CREATE NETWORK-NODE EQUIPMENT "i" SETUP WAVELENGTH INFORMATION AND TOPOLOGY RECONFIGURATION CLOCK-TIME INFORMATION CLASS TRANSMIT CLASS TO NETWORK-NODE EQUIPMENT "i" S13c S14c i = i + 1S15c No i = P + 1?Yes

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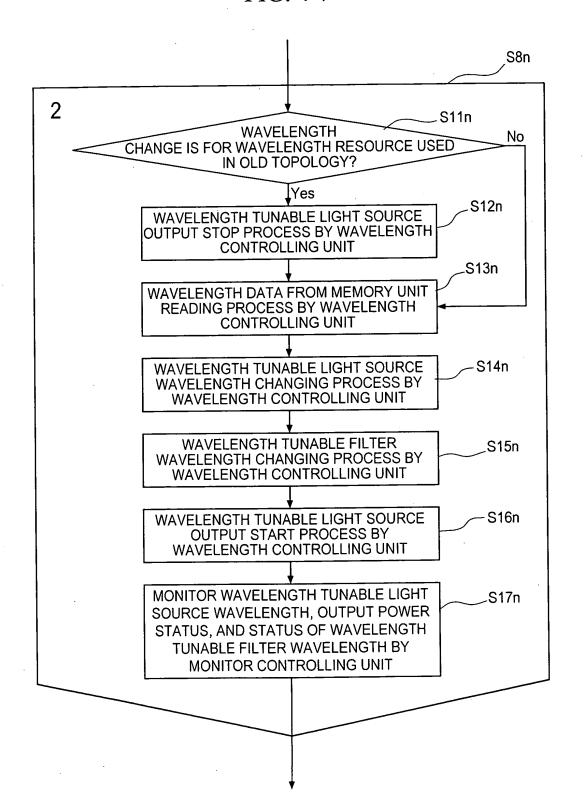
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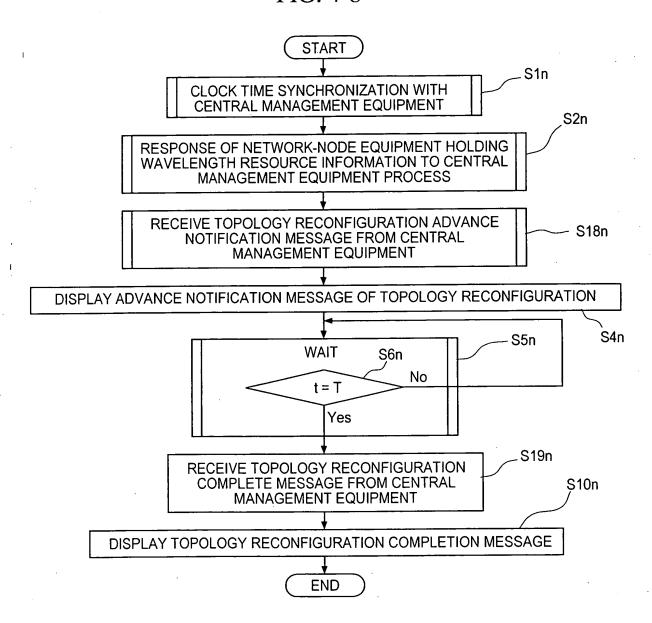
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FIG. 4-7



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FIG. 4-8



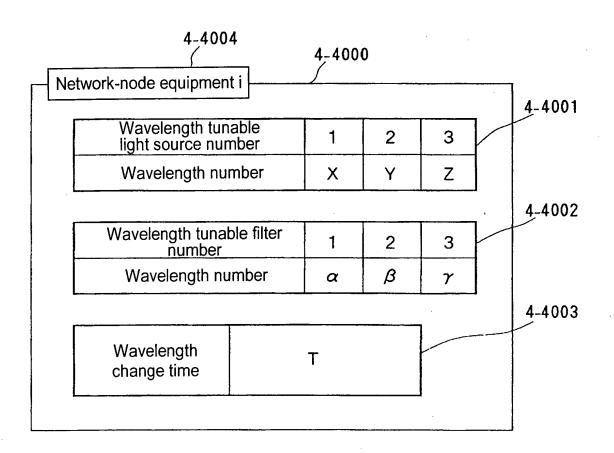
Title: FIBER OPTIC COMMUNICATION SYSTEM Inventor(s): Hiromasa TANOBE, et al.

Atty. Ref.: 5259-054/NP

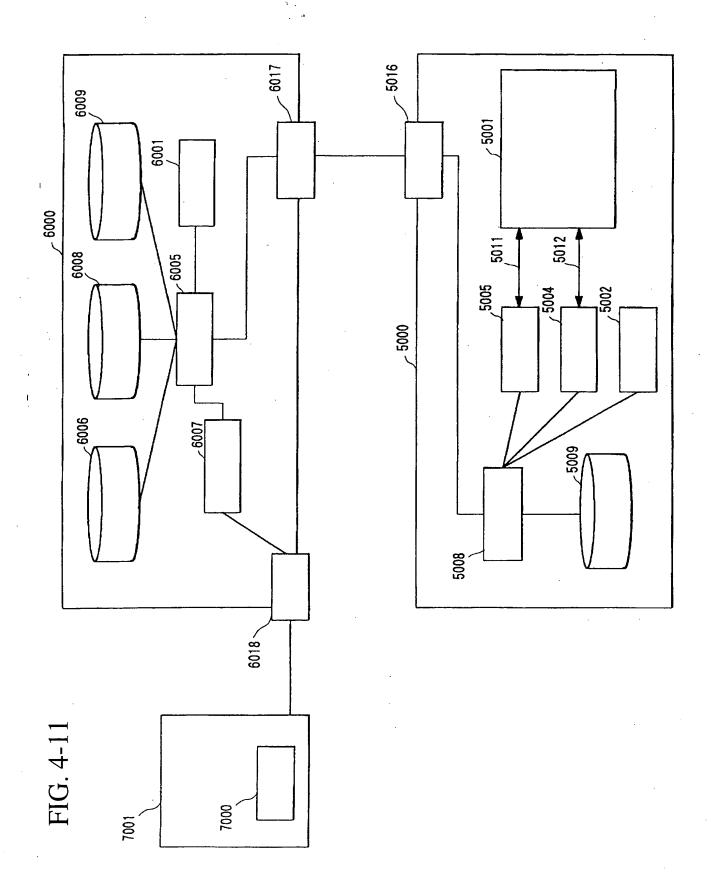
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FIG. 4-9



Title: FIBER OPTIC COMMUNICATION SYSTEM Inventor(s): Hiromasa TANOBE, et al. Atty. Ref.: 5259-054/NP 10/542316 99/122 L5015 -4-6000 -6010~4-6012 4-5013 4-5011 4-6015 6013 4-6014 4-5000 4-5002 4-5004 4-5005 4-5006-4-6018 4-6004 4-5007, 4-6017 FIG. 4-10 4-7000



Title: FIBER OPTIC COMMUNICATION SYSTEM Inventor(s): Hiromasa TANOBE, et al. Atty. Ref.: 5259-054/NP

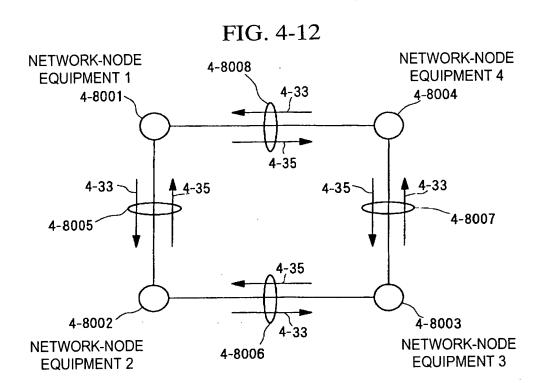


		FIG. 4-	13	
	1	2	3	4
1	3 2	3 3 (4-9001)	3 4	3 5 (4-9002)
2	3 5 (4-9003)	3 2	3 3 (4-9004)	3 4
3	3 4	3 5 (4-9005)	3 2	3 3 (4-9006)
4	3 3 (4-9007)	3 4	3 5 (4-9008)	3 2

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FIG. 4-14

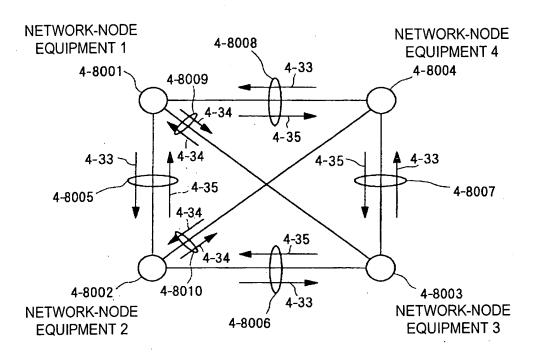


FIG. 4-15

			4-9000	
-	1	2	3	4
1	3 2	3 3 (4-9001)	3 4 (4-9009)	3 5 (4-9002)
2	3 5 (4-9003)	3 2	3 3 (4-9004)	3 4 (4-9010)
3	3 4 (4-9011)	3 5 (4-9005)	3 2	3 3 (4-9006)
4	3 3 (4-9007)	3 4 (4-9012)	3:5 (4-9008)	3 2

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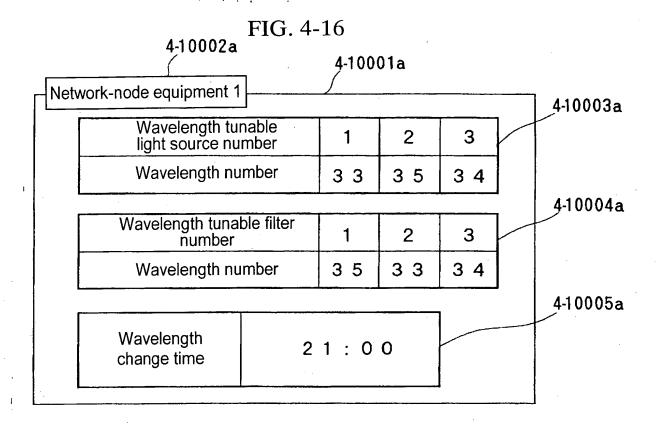


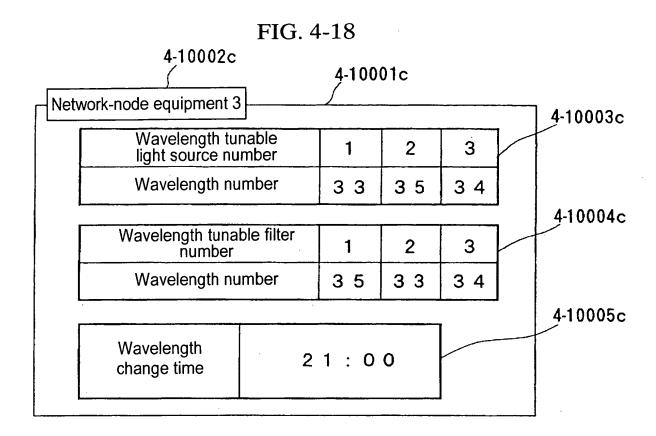
FIG. 4-17 4-10002b 4-10001b Network-node equipment 2 4-10003b Wavelength tunable light source number 2 1 3 Wavelength number 3 3 3 5 3 4 4-10004b Wavelength tunable filter 1 3 2 ňumber Wavelength number 3 3 3 4 3 5 4-10005b Wavelength 21:00 change time

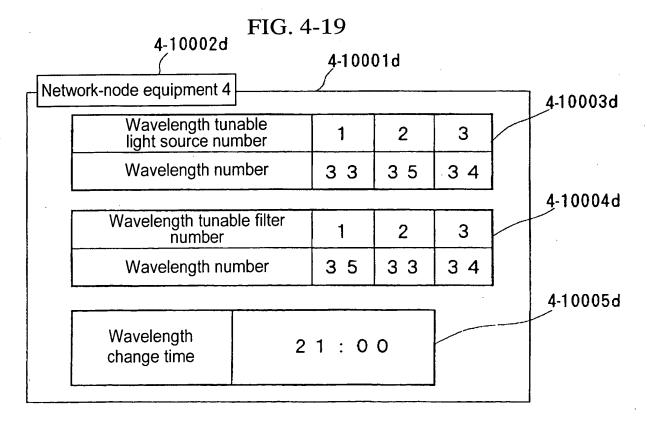
Title: FIBER OPTIC COMMUNICATION SYSTEM Inventor(s): Hiromasa TANOBE, et al.

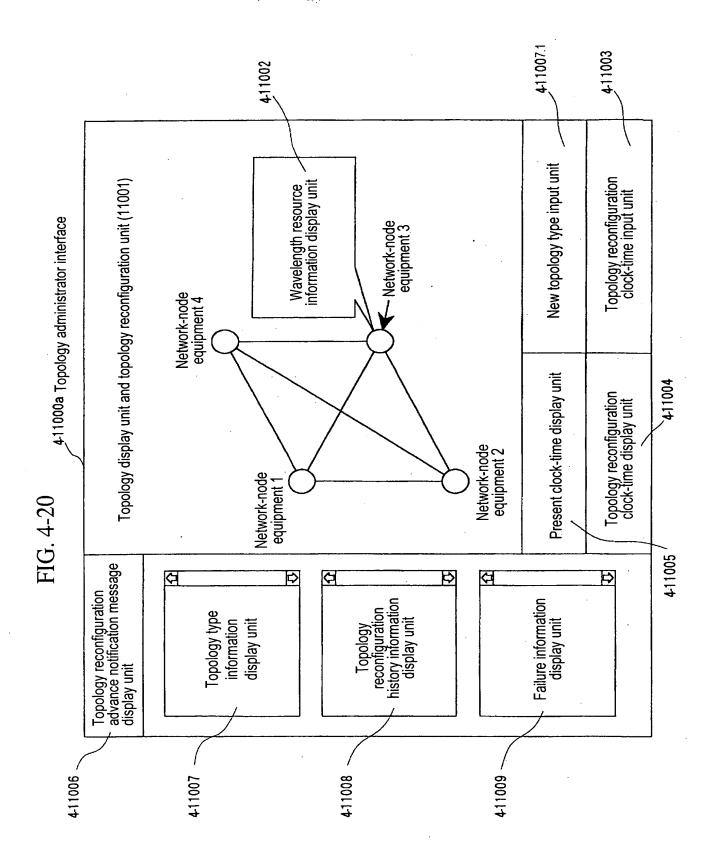
Atty. Ref.: 5259-054/NP

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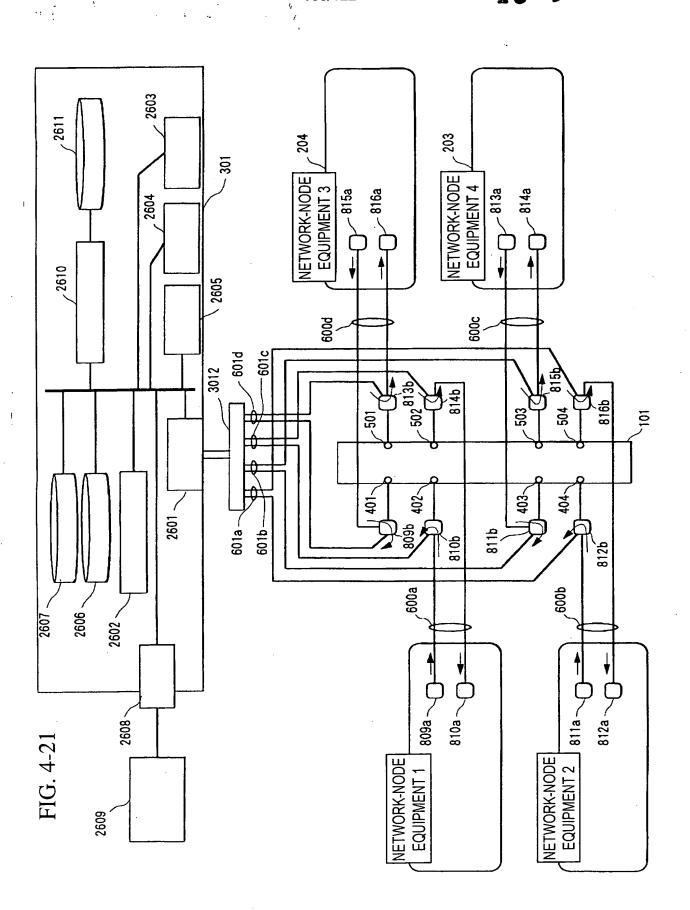
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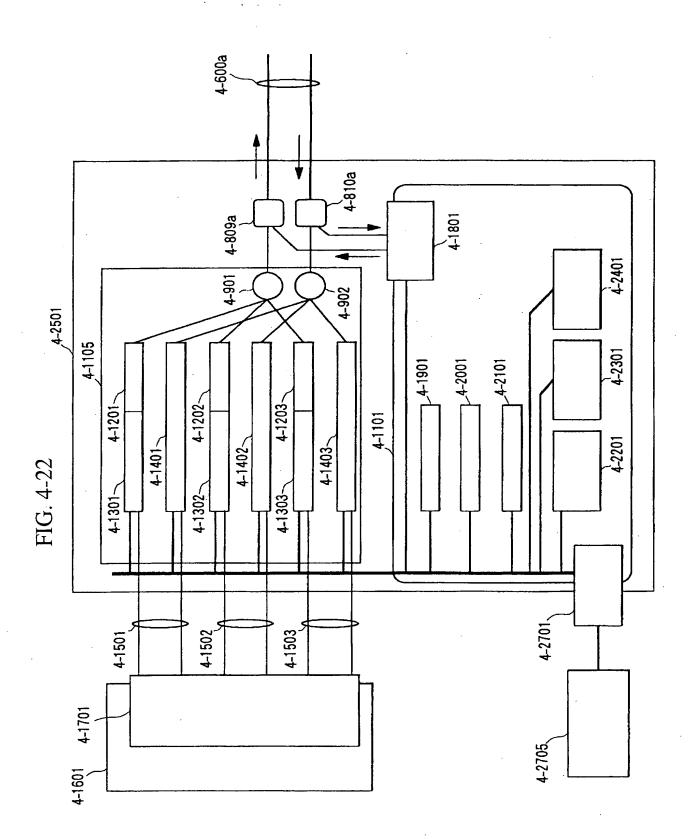


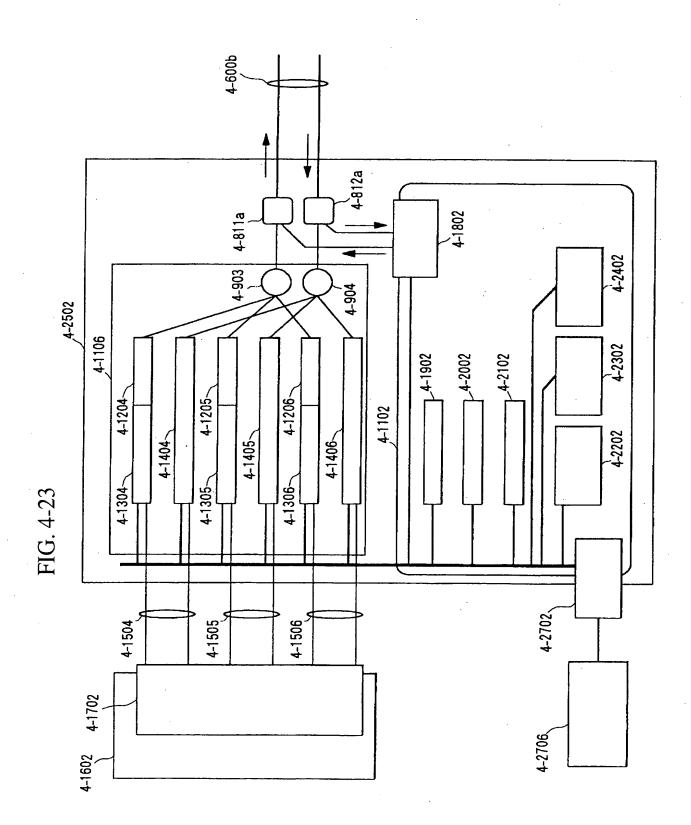


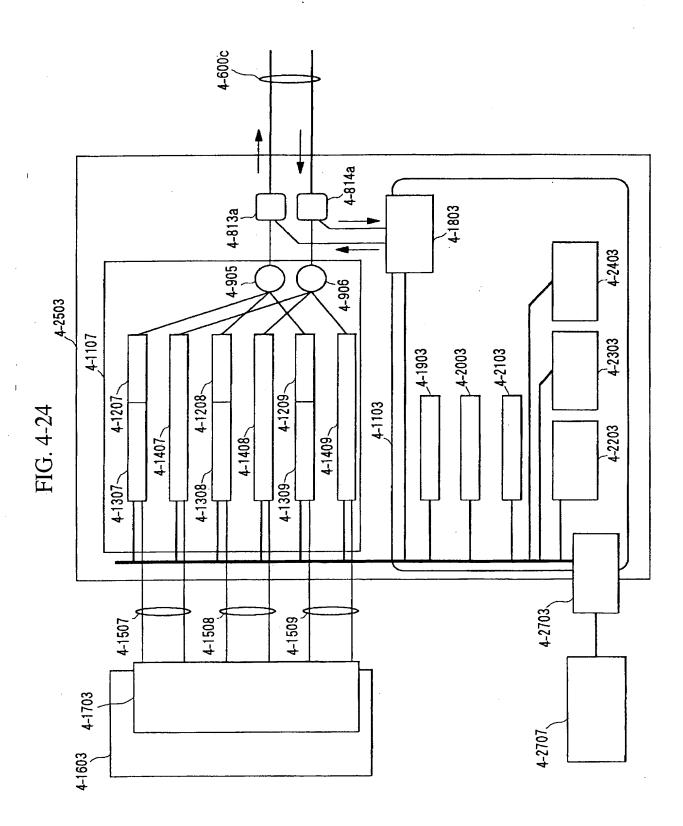


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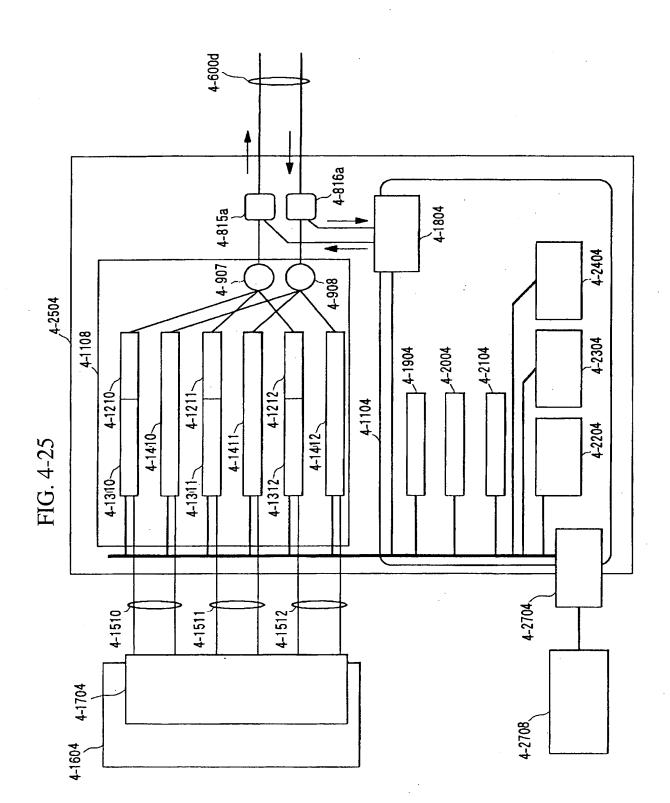


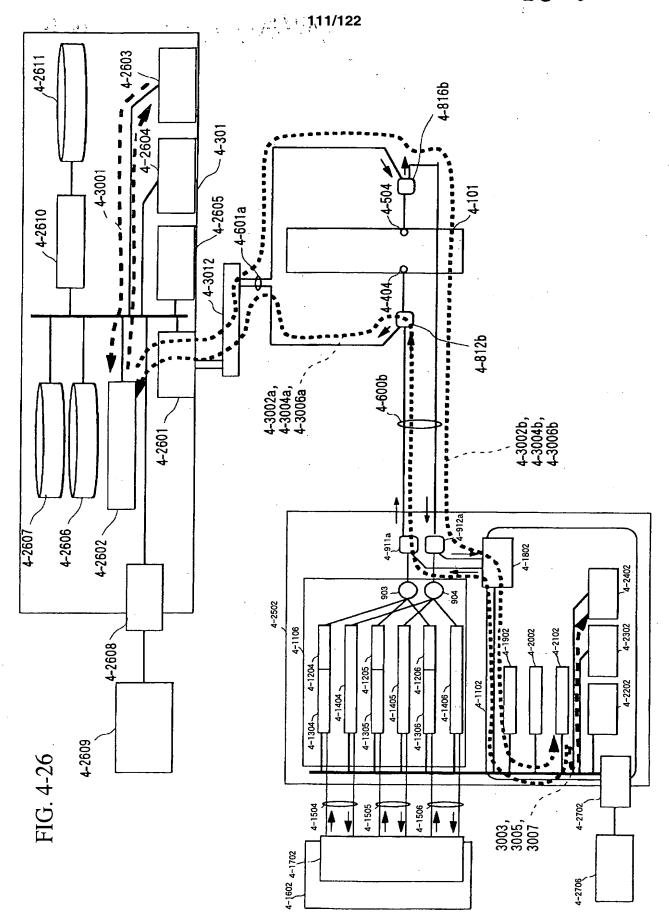






Francisco Contraction



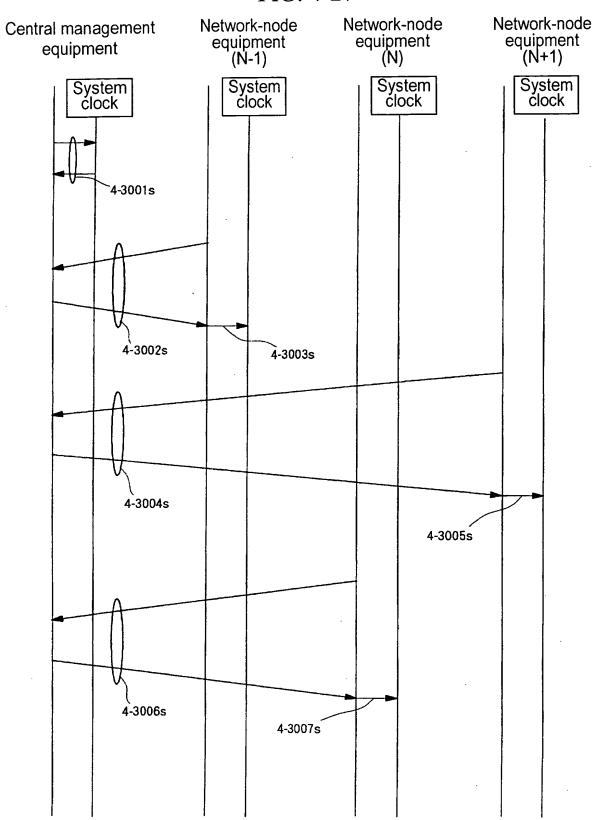


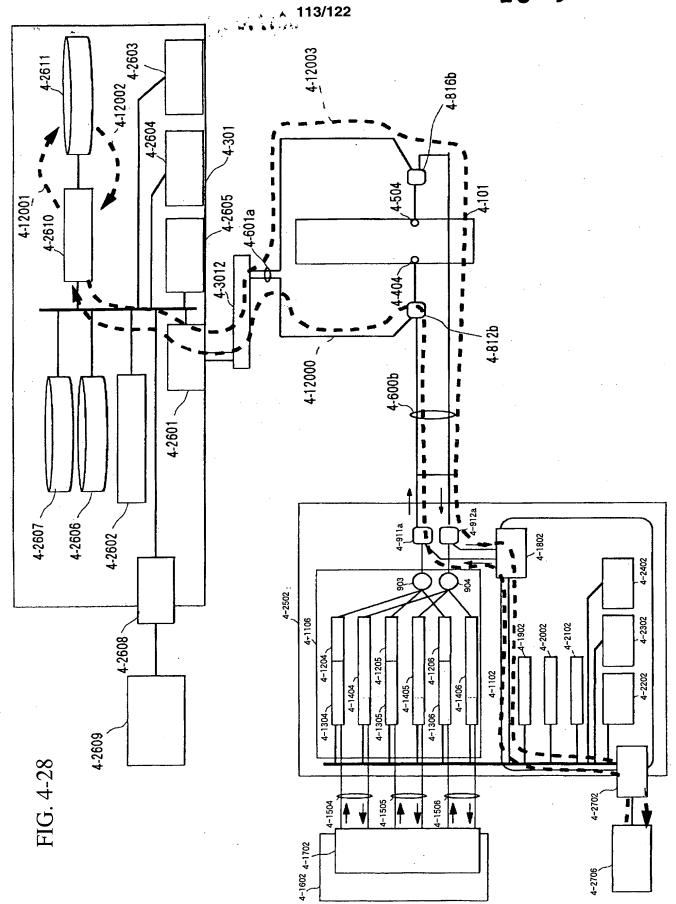
Title: FIBER OPTIC COMMUNICATION SYSTEM Inventor(s): Hiromasa TANOBE, et al.

tor(s): Hiromasa TANOBE, et Atty. Ref.: 5259-054/NP

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FIG. 4-27





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FIG. 4-29

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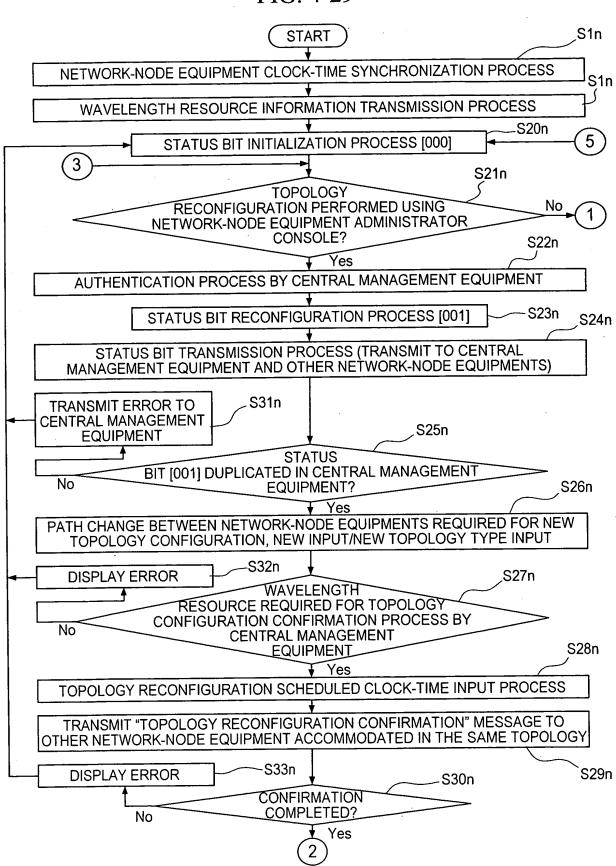
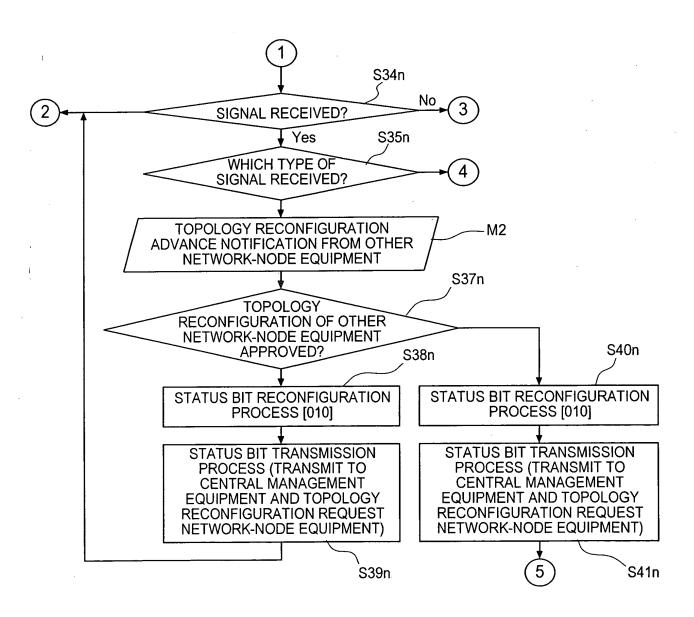


FIG. 4-30

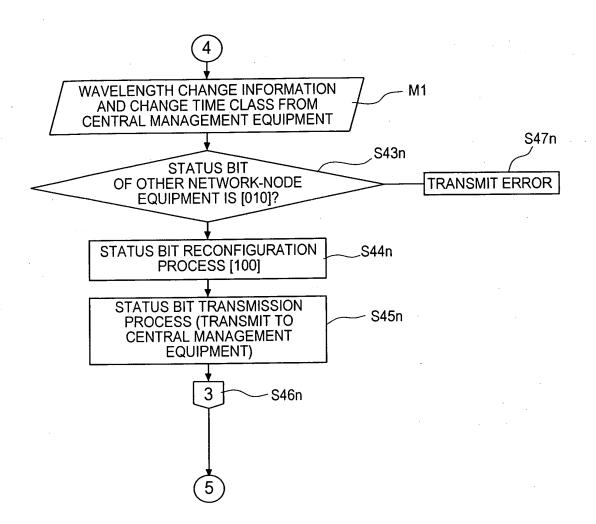


Atty. Ref.: 5259-054/NP

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FIG. 4-31

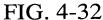


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* (B)

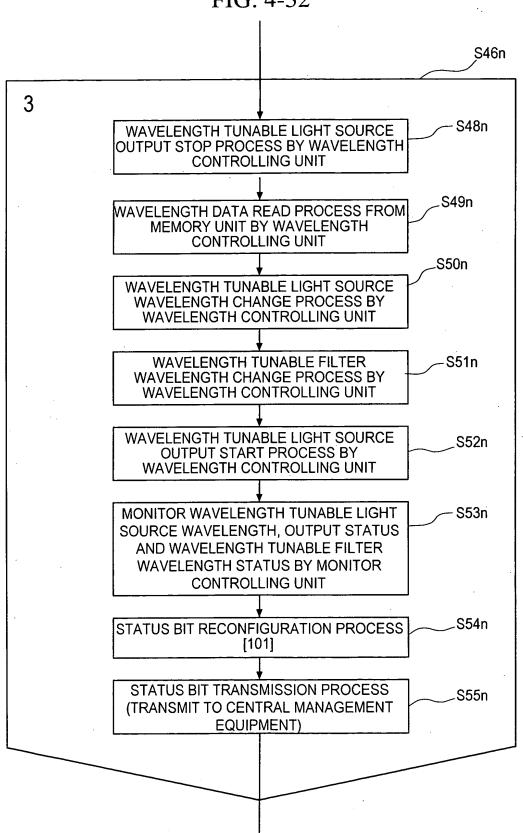
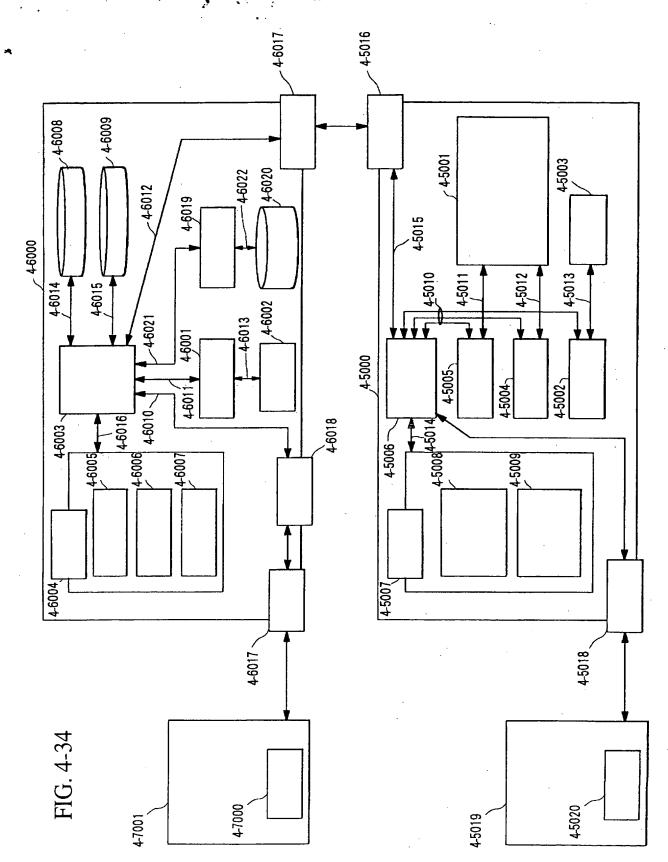
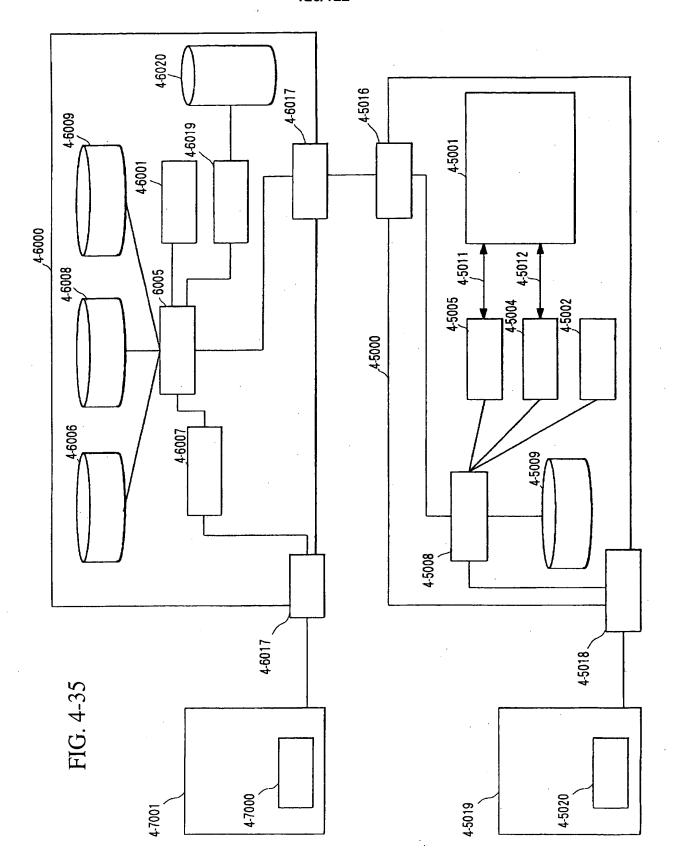


FIG. 4-33	4-12002	Network-node equipment status	Initial status	Topology reconfiguration reserved status	Completion of acceptance of topology reconfiguration request from other network-node equipment status	Rejection of topology reconfiguration request from other network-node equipment status	Completion of reception of wavelength and reconfiguration clock-time class status	Completion of reconfiguration to new wavelength status
	4-12001	Status bits	000	001	010	011	100	101

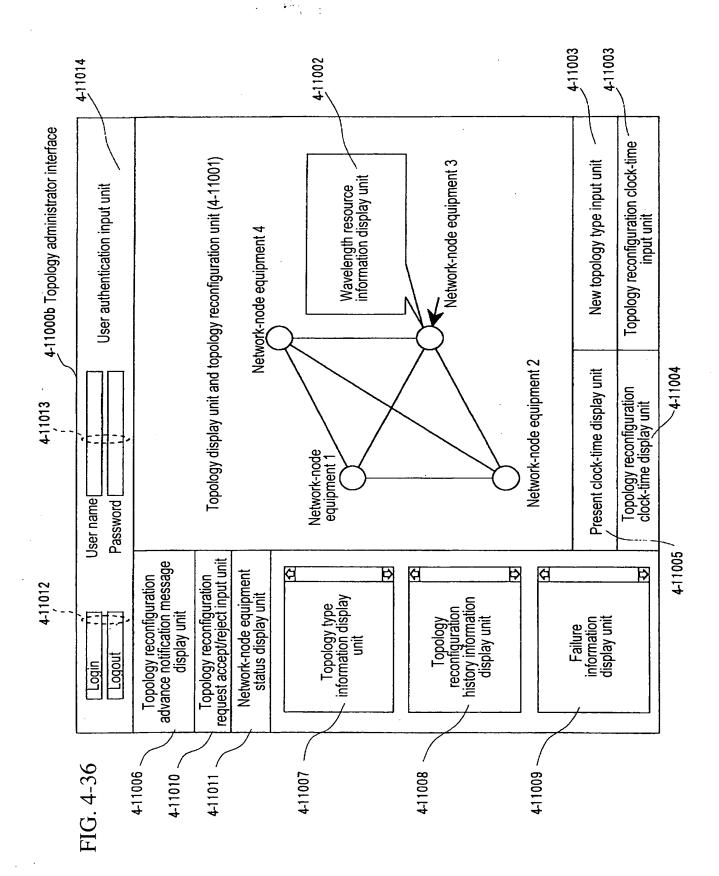
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